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6th
1962 REPORT OF ALFALFA NURSERIES
EASTERN ALFALFA IMPROVEMENT CONFERENCE

Conducted cooperatively by the various
State Agricultural Experiment Stations
and
The United States Department of Agriculture,
Agricultural Research Service, Forage and Range
Research Branch, in Eastern United States

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1962
REPORT OF ALFALFA NURSERIES
EASTERN ALFALFA IMPROVEMENT CONFERENCE

Report compiled by C. H. Hanson, Research Agronomist,
Forage and Range Research Branch, Crops Research Division,
Agricultural Research Service, U.S. Department of Agriculture.

INTRODUCTION

This is the sixth Alfalfa Nurseries Report of the Eastern Alfalfa Improvement Conference, consisting primarily of data on alfalfa varieties and breeding material. This is a progress report which contains findings that may or may not be verified in subsequent experiments. Therefore, data reported and statements contained herein do not constitute publication. For this reason, citation to any part of this report should not be made without prior permission from the agency(s) or workers(s) concerned.

ARKANSAS

Alfalfa Variety Yield Trials-1962

Rainfall for the 6-month period, April 1 to October 1, was slightly above the long-time average in northwestern and southeastern Arkansas, but below the long-time average in all other areas of the state. Rainfall was extremely erratic over the entire state during the growing season, with drought periods of sufficient length to reduce alfalfa yields occurring in every area of the state. Drought conditions were especially severe in the northeastern and east central parts of the state in 1962.

January temperatures were much lower than the long-time average, with readings well below zero being recorded in all areas of the state. Unseasonably warm temperatures in February (5 to 8 degrees above the long-time average for the month) caused the alfalfa to break dormancy and start rapid growth, but low temperatures in March and April killed a major portion of the succulent top growth that was made during February. As a result of this situation which tended to deplete root reserves, many stands of alfalfa were weakened noticeably. Temperatures for the remainder of the growing season were, in general, quite favorable for the growth of alfalfa.

The *Stagonospora-Leptosphaeria* leaf spot-crown rot complex was observed in several areas in 1962, but it did not appear to be as severe as it was in 1961. Other diseases reported were common leaf spot (*Pseudo-peziza medicaginis*), downy mildew (*Peronospora trifoliorum*), spring black stem (*Ascochyta imperfecta*), and bacterial wilt (*Corynebacterium insidiosum*), but none appeared to be any more serious than normal.

Various small leafhoppers, generally the potato leafhopper (*Empoasca fabae*) but also including several other species of similar appearance, caused severe yellowing of alfalfa over wide areas of the state. Pea aphids, spotted alfalfa aphids, blister beetles, and three-cornered alfalfa hoppers, though present in many areas, caused damage of economic importance only in localized situations.

Alfalfa varieties recommended in Arkansas in 1962 are as follows:

Buffalo, Cherokee, Cody, and Ranger, in that order, are recommended for the entire state.

Vernal is recommended for the upland soils of northern and western Arkansas.

Lahontan is recommended for the heavy clay Delta soils.

Table 1.-Main Alfalfa Variety Yield Test - 1962

Location: Block 37, Agronomy Farm, Fayetteville, Arkansas.
 Design: Randomized Block; 4 replications.
 Established: September 20, 1956 on Waynesboro silt loam soil.
 Soil Treatment: 40-80-80 fertilizer and 2 tons lime per acre at time of seeding. Topdressed with 25-50-100 fertilizer per acre on February 28, 1957, 0-30-60 fertilizer per acre on March 21, 1958, 0-60-30 fertilizer per acre on February 27, 1959, 0-100-150 fertilizer and 20 pounds of boron per acre on February 17, 1961, and 0-100-150 fertilizer and 20 pounds of boron per acre on January 30, 1962.

Plot Size: 5 feet by 20 feet.

Seeding Rate: 20 pounds of live, pure seed per acre.

Harvested: 5 times (May 21, June 19, July 19, August 28, and October 23, 1962)

Variety	Hay yield in tons per acre (12% moisture)					Percent leaves ² /		Stand 1/	6-yr. ave. 1962	Leaf hopper Spring injury vigor 3/4/	Re-covery after cut- ting 5/6/		
	1st cut	2nd cut	3rd cut	4th cut	5th cut	Total 6-yr. ave. 1962	6-yr. ave. 1962						
Dupuits F.C. 24697	1.03	1.04	.76	.63	.49	3.95	3.94	68	51.1	50.5	4.8	4.0	4.0
Canadian Sc. Ms. 531	.65	.90	.67	.68	.32	3.22	2.74	37	53.1	55.5	4.9	7.0	8.0
Lahontan F.C. 33087	1.17	1.23	1.01	.71	.56	4.68	3.85	83	47.8	49.7	5.6	4.8	4.0
Indiana Syn ¹ "F" F.C. 33188	1.27	1.20	.75	.56	.46	4.24	4.04	74	54.8	53.5	3.8	5.9	6.0
New Mexico 11-1 F.C. 33209	1.16	1.17	1.00	.65	.60	4.58	4.31	74	51.9	48.8	4.5	5.0	5.0
Buffalo F.C. 32984	1.22	1.12	.98	.70	.59	4.61	4.39	73	54.2	50.8	4.8	5.0	5.0
Socheville P.I. 224623	1.14	1.07	.95	.75	.51	4.42	4.45	60	50.9	49.9	4.9	4.0	4.3
N.C. Syn. B(51)7 F.C. 32644	1.23	1.12	.86	.71	.65	4.57	4.50	72	49.9	49.5	4.5	4.9	4.9
Williamsburg F.C. 33204	1.02	1.05	1.07	.74	.52	4.40	4.44	65	50.7	48.5	4.4	4.6	5.0
Caliverde F.C. 32594	.85	.93	.80	.72	.54	3.84	3.69	55	49.0	49.1	5.0	5.3	4.3
Vernal F.C. 31983	1.30	1.22	.96	.60	.55	4.63	4.61	78	51.7	52.5	3.5	6.0	6.0
Atlantic F.C. 33492	.97	.87	.77	.65	.49	3.75	4.04	65	53.8	49.7	5.1	5.4	5.5
L.S.D. at .05 level	.19	.18	.12	N.S.	.10	.66		10.3	N.S.				
L.S.D. at .01 level	.26	.25	N.S.	N.S.	.13	.89		13.9	N.S.				
C.V.	12.2%	12.1%	19.0%	18.6%	13.0%	10.8%		10.7%	6.8%				
1/ Stand counts were made by the point quadrat method on June 4, 1962. One hundred points were counted per 5' x 20' plot 14 days after first cutting was made. Stand based on number of hits per 100 points.													
2/ Percent leaves based on samples of 40 stems per plot. Samples harvested on June 18, 1962.													
3/ Leafhopper injury scores based on scale of 1 to 9; 1 = no yellowing, 9 = severe yellowing. Scored on August 27, 1962.													
4/ Spring vigor scores based on scale of 1 to 9; 1 = high vigor, 9 = low vigor. Scored on April 30, 1962.													
5/ Recovery after cutting scores based on scale of 1 to 9; 1 = rapid recovery, 9 = slow recovery. Score on June 4, 1962.													
6/ Fall vigor scores based on scale of 1 to 9; 1 = high vigor, 9 = low vigor. Scored on September 17, 1962.													

1/ Stand counts were made by the point quadrat method on June 4, 1962. One hundred points were counted per 5' x 20' plot 14 days after first cutting was made. Stand based on number of hits per 100 points.

2/ Percent leaves based on samples of 40 stems per plot. Samples harvested on June 18, 1962.

3/ Leafhopper injury scores based on scale of 1 to 9; 1 = no yellowing, 9 = severe yellowing. Scored on August 27, 1962.

4/ Spring vigor scores based on scale of 1 to 9; 1 = high vigor, 9 = low vigor. Scored on April 30, 1962.

5/ Recovery after cutting scores based on scale of 1 to 9; 1 = rapid recovery, 9 = slow recovery. Score on June 4, 1962.

6/ Fall vigor scores based on scale of 1 to 9; 1 = high vigor, 9 = low vigor. Scored on September 17, 1962.

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Table 2.-Alfalfa "Synthetic" Variety Yield Test - 1962

Location: Block 37, Agronomy Farm, Fayetteville, Arkansas.

Design: Randomized block; 4 replications.

Established: September 20, 1956 on Waynesboro silt loam soil.

Soil Treatment: 40-80-80 fertilizer and 2 tons lime per acre at time of seeding. Topdressed with 25-50-100 fertilizer per acre on February 23, 1957, 0-30-60 fertilizer per acre on March 21, 1958, 0-60-30 fertilizer per acre on February 27, 1959, 0-100-150 fertilizer and 20 pounds of boron per acre on March 23, 1960, 0-60-180 fertilizer and 20 pounds of boron per acre on February 17, 1961, and 0-100-150 fertilizer and 20 pounds of boron per acre on January 30, 1962.

Plot Size: 5 feet by 20 feet.

Seeding Rate: 20 pounds of live, pure seed per acre.

Harvested: 5 times (May 21, June 19, July 19, August 28, and October 23, 1962).

Variety	Hay yield in tons per acre (12% moisture)										Percent leaves ² /		Leaf-hopper injury $\frac{3}{4}$	Spring vigor $\frac{4}{4}$	Rcvy after cutting $\frac{5}{5}$	Fall vigor $\frac{6}{6}$		
	1st cut		2nd cut		3rd cut		4th cut		5th cut		Total						6-yr. ave.	
	cut	cut	cut	cut	cut	cut	cut	cut	cut	cut	1962	57-62					1962	57-62
A-225 Syn. 4	1.12	1.12	1.01	1.02	.49	4.76	4.33	76	52.9	51.1	4.5	5.1	5.9	6.0				
Indiana Syn. "F" F.C.33188	1.31	1.10	1.00	.89	.52	4.82	4.60	75	52.7	51.1	3.6	6.0	6.0	6.0				
Vernal F.C.31983	1.21	1.18	.91	.84	.48	4.62	4.52	73	54.4	50.4	3.8	5.8	5.8	6.0				
A-253 Syn. 1	1.26	1.15	.90	.88	.50	4.69	4.51	79	54.2	52.0	4.1	5.5	6.0	6.0				
Buffalo F.C.32984	1.22	1.19	1.05	1.05	.51	5.02	4.60	79	48.6	49.1	4.8	5.0	5.0	5.0				
A-224 Syn. 3	1.17	1.00	.83	.81	.44	4.25	4.02	73	53.6	52.4	4.5	6.3	6.5	7.0				
A-248 (Grandfield)	1.23	1.15	.93	.85	.51	4.67	4.60	76	49.6	49.3	4.1	5.1	5.1	5.0				
A-204 Syn. 4	1.33	1.08	.81	.89	.46	4.57	4.55	76	53.8	52.6	4.8	5.5	6.0	6.0				
A-223 F.C.24993	1.18	1.06	.94	.96	.50	4.64	4.44	63	53.5	51.4	4.6	5.4	6.0	6.0				
Ranger	1.15	1.11	.92	1.05	.43	4.66	4.24	73	52.8	51.2	5.5	5.3	5.5	5.4				
L.S.D. at .05 level	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.						
L.S.D. at .01 level	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.						
C.V.	10.8%	7.2%	13.9%	16.6%	10.6%	6.9%					17.6%	5.3%						

- 1/ Stand counts were made by the point quadrat method on June 4, 1962. One hundred points were counted per 5'x20' plot 14 days after first cutting was made. Stand based on number of hits per 100 points.
- 2/ Percent leaves based on samples of 40 stems per plot. Samples harvested on June 18, 1962.
- 3/ Leafhopper injury scores based on scale of 1 to 9; 1 = no yellowing, 9 = severe yellowing. Scored on August 27, 1962.
- 4/ Spring vigor scores based on a scale of 1 to 9; 1 = high vigor, 9 = low vigor. Scored on April 30, 1962.
- 5/ Recovery after cutting scores based on scale of 1 to 9; 1 = rapid recovery, 9 = slow recovery. Scored on June 4, 1962.
- 6/ Fall vigor scores based on scale of 1 to 9; 1 = high vigor, 9 = low vigor. Scored on September 17, 1962.

Table 3.--Lower Mississippi Valley Uniform Alfalfa Variety Test #6 - 1962

Location: Northeast Branch Experiment Station, Keiser, Arkansas.
 Design: Randomized block; 4 replications.
 Established: September 16, 1958 on Sharkey Clay loam (medium) soil.
 Soil Treatment: 30-60-60 fertilizer per acre at time of seeding. Topdressed with 0-50-100 fertilizer per acre on February 17, 1962.
 Plot Size: 5 feet by 20 feet.
 Seeding Rate: 20 pounds of live, pure seed per acre.
 Harvested: 4 times (May 16, June 14, July 17, and September 13, 1962).

Variety	Hay yield in tons per acre (12% moisture)				Total 1962	5-yr. ave. 59-62	Stand 1/ 1/	Spring vigor 2/ 2/
	1st cut	2nd cut	3rd cut	4th cut				
Stoneville P.C. #1	1.26	.68	1.57	.86	4.37	4.87	69	4.9
Stoneville Buffalo Sel.	1.40	.64	1.46	.86	4.36	4.78	68	5.3
Buffalo	1.33	.61	1.71	.92	4.57	5.05	70	5.0
N.C. Syn. AB(57)	1.24	.65	1.49	.74	4.12	4.84	74	4.9
N.C. Syn. A(51)5	1.49	.79	1.63	.96	4.87	5.32	70	4.6
N.C. Syn. D(51)12	1.17	.60	1.59	.78	4.14	4.55	68	5.0
N.C. Syn. B(51)7	1.41	.74	1.47	.84	4.46	5.16	73	4.9
Ranger	1.44	.73	1.51	.87	4.55	5.07	81	5.5
Kansas Syn. B ₁ (Cody)	1.17	.71	1.75	.88	4.51	4.67	73	5.4
Lahontan	1.38	.77	1.27	.90	4.32	4.72	82	4.0
Rhizoma	1.31	.69	1.51	.86	4.37	4.48	77	6.5
Vernal	1.58	.59	1.35	.82	4.34	4.94	71	5.8
L.S.D. at .05 level	.23	N.S.	.27	N.S.	N.S.		N.S.	
L.S.D. at .01 level	N.S.	N.S.	N.S.	N.S.	N.S.		N.S.	
C.V.	11.8%	18.5%	12.1%	14.3%	9.1%		10.0%	

1/ Stand counts were made by the point quadrat method on May 31, 1962. One hundred points were counted per 5' x 20' plot 15 days after first cutting was made. Stand based on number of hits per 100 points.
 2/ Spring vigor scores based on a scale of 1 to 9; 1 = high vigor, 9 = low vigor. Scored on April 23, 1962.

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Table 4.--Lower Mississippi Valley Uniform Alfalfa Variety Test #10 - 1962

Location: Northeast Branch Experiment Station, Keiser, Arkansas.
 Design: Randomized block; 4 replications.
 Established: March 19, 1962 on Sharkey Clay - loamy sand, overwash, undulating (mixed) soil.
 Soil Treatment: None.
 Plot Size: 5 feet by 20 feet.
 Seeding rate: 20 pounds of live, pure seed per acre.
 Harvested: 3 times (June 29, August 9, and October 5, 1962).

Variety	Hay yield in tons per acre (12% moisture)				Total 1962
	1st cut	2nd cut	3rd cut		
Uinta	1.27	.58	1.51		3.36
Lahontan	1.17	.61	1.32		3.10
Stoneville P.C. #1	1.05	.63	1.56		3.24
Rhizoma	1.18	.61	1.70		3.49
Culver	1.20	.50	1.50		3.20
Cherokee	1.20	.72	1.43		3.35
Arkansas Syn. P-2	1.14	.57	1.33		3.04
Cayuga	1.28	.70	1.54		3.52
Buffalo	1.31	.66	1.42		3.39
Vernal	1.28	.66	1.60		3.54
Cody	1.19	.69	1.43		3.31
Ranger	1.16	.60	1.46		3.22
L.S.D. at .05 level	N.S.	N.S.	N.S.		N.S.
L.S.D. at .01 level	N.S.	N.S.	N.S.		N.S.
C.V.	12.0%	14.3%	11.3%		7.9%

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Table 5.--Lower Mississippi Valley Uniform Alfalfa Variety Test #7 - 1962

Location:

Southeast Branch Experiment Station, Kelso, Arkansas.

Design:

Randomized block; 4 replications.

Established:

September 15, 1959 on a Hebert silt loam soil.

Soil treatment:

36-36-36 fertilizer per acre applied at time of seeding. Topdressed with 0-40-80 fertilizer per acre April 1, 1961 and 0-40-80 fertilizer per acre February 6, 1962.

Plot Size:

5 feet by 20 feet.

Seeding Rate:

20 pounds of live, pure seed per acre.

Harvested:

2 times (May 11 and June 11, 1962). 1/

Variety	Hay yield in tons per acre (12% moisture)					Stand ^{2/}		3-yr. ave.		Recovery	
	1st cut	2nd cut	Total 1962	Total 1961	Total 1960	1960	1962	1960-62	Spring vigor	after cut- ting 3/	4/
Rhizoma	1.53	.45	1.98	3.84	4.41	72	24	3.41	6.0	6.0	5.0
Vernal	1.10	.36	1.46	3.11	4.48	61	11	3.02	4.8	4.8	5.3
N.C. Syn. B(51)7	1.61	.60	2.21	4.53	5.53	74	24	4.09	3.6	3.6	4.3
Lahontan	1.11	.34	1.45	3.61	4.08	74	14	3.05	5.0	5.0	3.8
Rambler ^{5/}	---	---	---	---	4.09	66	7	---	7.3	7.3	5.5
Stoneville P.C. #1	1.57	.63	2.20	4.54	4.66	74	28	3.80	4.1	4.1	4.0
N.C. Syn. D(51)12	1.39	.37	1.76	4.10	5.08	72	18	3.65	4.0	4.0	4.8
Ranger	1.54	.23	1.77	3.04	4.80	69	9	3.20	5.3	5.3	5.0
N.C. Syn. A(51)5	1.79	.59	2.38	4.27	4.89	72	28	3.85	3.8	3.8	4.3
N.C. Syn. AB(57)	1.94	.37	2.31	3.65	4.62	69	17	3.53	3.9	3.9	5.1
Kansas Syn. BI(Cody)	1.59	.40	1.99	3.84	4.94	73	14	3.59	4.6	4.6	4.9
Buffalo	1.87	.28	2.15	3.42	4.84	69	15	3.47	5.0	5.0	5.0
L.S.D. at .05 level	.48	.18	.57	.61	.65	N.S.	9				
L.S.D. at .01 level	N.S.	.24	N.S.	.82	.88	N.S.	12				
C.V.	21.4%	29.0%	20.0%	11.1%	9.6%	8.4%	35.7%				

1/ Only two cuttings were made in 1962 because of poor stands and a weed problem in the latter part of the season.
 2/ Stand counts were made by the point quadrat method on May 18, 1960 (14 days after 1st cut) and on June 22, 1962 (11 days after 2nd cut was made). One hundred points were counted per 5' x 20' plot and stands based on number of hits per 100 points.

3/ Spring vigor scores based on scale of 1 to 9; 1 = high vigor, 9 = low vigor. Scored on April 24, 1962.

4/ Recovery after cutting scores based on scale of 1 to 9; 1 = rapid recovery, 9 = slow recovery. Scored on June 22, 1962, 11 days after the second cutting was made.

5/ Rambler not harvested in 1961 or 1962 because of poor stands.

GEORGIA - Experiment

Table 6.--Alfalfa Variety Test
Georgia Experiment Station
Experiment, Georgia
1961-1962

Yield of oven dry forage, tons per acre			
Variety or strains	1961	1962	Average
Vernal	4.00	2.57	3.28
Williamsburg	3.90	2.29	3.10
G(57)3	3.70	2.50	3.10
G(57)2	3.70	2.43	3.06
Sokeville	3.70	2.36	3.03
Narragansett	3.80	2.21	3.00
F(56)1	3.50	2.40	2.95
Atlantic	3.60	2.28	2.94
Oklahoma Common	3.70	2.17	2.93
DuPuits	3.70	2.08	2.89
Rhizoma	3.70	2.06	2.88
Buffalo	3.60	2.05	2.82
Ranger	3.50	1.99	2.74
FD 100	3.30	2.15	2.72
E58	3.20	2.13	2.66
New Mexico 11-1	3.30	2.01	2.65
Caliverde	3.20	1.49	2.34
Rambler	3.10	1.11	2.10
Zia	2.90	1.25	2.07
Moapa	3.10	.90	2.00
Lahontan	2.40	1.11	1.75
LSD 5%	.73	.49	.26
CV %	12.7	17	14

Planted October 12, 1960; 20 lbs/A of seed, broadcast. Plots 4' x 20', 4 replications. Whole plots harvested, dried with hot air and weighed. Fertilizer prior to seeding--500 lbs/A 4-12-12. Lime--3 t/A. Topdressing, March 1962--600 lbs/A 0-14-14 (included chlordan to kill alfalfa weevils).

KENTUCKY - Woodford County

Table 7.--Yield in tons of dry matter per acre of alfalfa varieties and harvested in 1961 and 1962 (Expt. 65)

Location: Woodford County, Ky. Design: Randomized block (6 replications)
Established: August 29, 1960 Plot Size: 5' x 16' seeded at rate of 15 lb/A

Varieties	1962 harvests				Total 1962	Total 1961	2-yr Ave.
	5/24	6/28	8/9	9/14			
Atlantic	1.98	1.72	0.98	0.61	5.29	4.48	4.89
Buffalo	1.96	1.81	1.11	0.65	5.53	4.63	5.08
Lahonton	1.64	1.52	0.78	0.50	4.44	4.06	4.25
Nairagansett	2.18	1.79	1.12	0.65	5.74	5.31	5.53
Ranger	1.96	1.62	0.98	0.57	5.13	4.10	4.62
Vernal	2.08	1.83	1.05	0.62	5.58	4.74	5.16
Cardinal	2.08	1.75	0.89	0.58	5.30	5.20	5.25
Orchies	2.00	1.83	0.94	0.60	5.37	5.50	5.44
FD-100	2.21	1.78	0.96	0.61	5.56	5.14	5.35
N.C.E58	2.10	1.78	1.09	0.65	5.62	5.00	5.31
N.C. G(57)3	1.91	1.80	0.99	0.63	5.33	5.20	5.28
Alfa	2.22	1.79	0.89	0.56	5.46	5.30	5.38
DuPuits	2.04	1.74	0.96	0.61	5.35	5.07	5.21
Maopa	1.71	1.66	0.91	0.50	4.78	2.99	3.88
Rambler	1.84	0.77	0.60	0.41	3.62	3.27	3.44
Teton	1.96	1.52	0.83	0.48	4.79	3.86	4.32
Willaimsburg	1.95	1.82	1.07	0.62	5.46	4.85	5.16
Glacier	1.99	1.57	0.86	0.58	5.00	5.51	5.26
Maliani	1.72	1.92	0.74	0.50	4.88	4.27	4.58
N.C.V (56)1	2.15	1.77	0.90	0.59	5.41	5.44	5.42
N.C. G(57)2	1.97	1.85	1.11	0.63	5.56	5.32	5.44
Cherokee	2.15	1.75	1.08	0.66	5.64	5.09	5.36
N9-502	2.31	1.81	1.02	0.59	5.73	4.82	5.28
N9-503	2.18	1.72	0.94	0.60	5.44	4.51	5.48
Cardinal (NK)	1.95	1.41	0.93	0.57	4.86	4.98	4.92
N9-500	1.99	1.84	0.97	0.62	5.42	4.82	5.12
N9-504	2.15	1.84	1.08	0.62	5.69	4.44	5.06
DuPuits (NK)	2.20	1.81	1.04	0.63	5.68	5.15	5.42
L.S.D. .05	0.24	0.24	0.15	0.09	0.48	0.42	0.33
.01	0.31	0.32	0.20	0.11	0.62	0.54	0.43
CV%	10.2	12.5	13.7	9.3	12.3	13.1	8.0
Interactions, etc.							
Harvests	--	--	--	--	**	**	--
Harvest x variety	--	--	--	--	**	**	--
Years	--	--	--	--	--	--	**
Years x variety	--	--	--	--	--	--	N.S.

Table 8.--Yield in tons of dry matter per acre of alfalfa varieties harvested in 1962 (Expt. 95)

Location: Princeton
Established: August 18, 1961

Design: Randomized Block (4 replications)
Plot Size: 5' x 16' seeded at rate of
15 lb/A

Variety	Accession Number	Harvest Date			Total 1962
		5/21	7/6	8/26	
Atlantic	F.C.35896	1.64	1.05	0.97	3.66
Buffalo	35982	1.51	1.16	0.97	3.64
Culver	36073	1.57	0.83	0.88	3.28
Du Puits	35985	1.99	1.22	1.15	4.36
Narragansett	36297	1.67	0.97	0.95	3.59
Ranger	35984	1.52	1.12	0.95	3.59
Rhizoma	35896	1.71	0.97	0.97	3.65
Vernal	35983	1.79	1.14	1.09	4.02
Williamsburg	34011	1.58	1.13	0.98	3.69
Cayuga	36225	1.64	0.90	0.93	3.47
Stoneville P.C.I.	35924	1.32	1.04	0.87	3.23
Cardinal	34103	1.79	1.19	1.10	4.08
L.S.D. .05		0.30	N.S.	0.16	N.S.
.01		N.S.	N.S.	N.S.	N.S.
CV%		12.5	23.1	11.4	15.7

Table 9. -- 1958 U.S.D.A. Variety-Cross Trial

Location: Ketola Field, Ithaca, N.Y. 1962 Data
 Management: 3 cuts/season -(1959-61)
 2 cuts-1962

NEW YORK - Ithaca

Random Number	Entry	Yield - Tons per Acre (12% M)			Lattice Adj. Total Season 3 yr. Ave.
		6/8	9/6	Total Season (RCB)	Total (Adj.) 59-61
1	Atlantic x Buffalo	.65	.55	1.20	4.62
2	Atlantic x Ind. Syn. F.	.78	.52	1.30	4.78
3	Atlantic x Lahontan	.71	.50	1.21	4.42
4	Atlantic x Narragansett	.73	.56	1.30	4.88
5	Atlantic x Rambler	.70	.50	1.20	4.74
6	Atlantic x Vernal	.86	.64	1.50	4.84
7	Buffalo x Ind. Syn. F.	.81	.61	1.42	4.73
8	Buffalo x Lahontan	.59	.51	1.10	4.46
9	Ind. Syn F. x Narragansett	1.02	.65	1.67	4.92
10	Ind. Syn F. x Vernal	.84	.65	1.49	4.77
11	Lahontan x Vernal	.85	.59	1.44	4.73
12	Narragansett x Williamsburg	.71	.46	1.17	4.85
13	Ranger x Vernal	.74	.52	1.27	4.72
14	Vernal x Rambler	.74	.55	1.29	4.70
15	Vernal x Williamsburg	.68	.53	1.21	4.79
16	Atlantic and Buffalo	.68	.54	1.22	4.76
17	Atlantic and Lahontan	.79	.48	1.21	4.62
18	Atlantic and Narragansett	.81	.59	1.40	4.87
19	Atlantic and Rambler	.73	.55	1.28	4.78
20	Atlantic and Vernal	.82	.57	1.39	4.91
21	Buffalo and Lahontan	.81	.56	1.37	4.55
22	Lahontan and Vernal	.77	.61	1.38	4.71
23	Narragansett & Williamsburg	.64	.39	1.03	4.71
24	Ranger and Vernal	.72	.46	1.18	4.59
25	Vernal and Rambler	.66	.43	1.09	4.71
26	Vernal and Williamsburg	.54	.34	.88	4.62
27	Mass. Polycross	.61	.42	1.03	4.41
28	F.C. 34044 - Atlantic	.60	.47	1.08	4.84
29	F.C. 34042 - Buffalo	.59	.45	1.03	4.55
30	F.C. 34174 - Ind. Syn. F	.70	.40	1.10	4.50

Table 9.--1958 U.S.D.A. Variety Cross Trial (Cont.)
1962 Data

Random Number	Entry	Yield-Tons/Acre (12%N)		Total Season (RCB)	Total/ (Adj.)	3 yr. Ave. Total Season (Adj. Lattice)
		6/18	9/6			
31	Lamontin	.57	.42	.99	.99	4.13
32	Narragansett	.69	.40	1.08	1.17	4.75
33	Rambler	.43	.25	.67	.64	4.14
34	Ranger	.65	.53	1.17	1.23	4.69
35	Vernal	.84	.53	1.37	1.36	4.97
36	Williamsburg	.55	.35	.90	1.04	4.78
	Ave.	.71	.50	1.21	1.21	4.61
	F - Varieties (RCB)	1.92**	2.13**	2.11**	.33	~.18
	L.S.D. (P=.05)	.23	.18	.38		
	C.V. %	28.3	30.8	27.5		
	Ave. D.M. %	28.9	25.7		13870	
	Effic.					

- Notes: 1) 1962 was extremely dry but the trial had been pushed to the limit on production over the 1st 3 yrs.
- 2) Again most New York sites where imperfect drainage is involved, wet resistance is a very minor production factor here.
- 3) This site is borderline for 3 cutting mgt. - under a 2-cut system stands could probably be maintained several years longer.
- 4) 4th year performance did not alter previous conclusions on variety crosses and mixtures.

Table 10.--1958 Alfalfa U.S.D.A. Singlecross Test
 Location: W. Lamkin Field 1962 Data and 1959-62 Summary
 Management: 3 cuts / season

NEW YORK - Ithaca

Random Number	Entry	Yield - Tons/Acre (12% M)				Lattice Adjusted Total Season Yields			59-62 Average	Stand 10/15 %	Gen'l. 6/7*	
		Season		9/5	7/20	1959	1960	1961				
		6/7	Total (RCB)									
6	49-40 x Minn 247	.66	.98	.23	.09	1.13	4.52	3.47	5.14	3.56	8	2.0
5	49-18 x Minn 247	1.12	1.78	.46	.20	1.85	4.44	3.78	5.57	3.91	57	5.0
8	49-40 x Minn 265	.94	1.63	.48	.22	1.53	4.83	3.44	5.40	3.80	18	2.3
7	49-18 x Minn 265	1.18	2.29	.75	.37	2.23	5.03	4.01	5.95	4.30	49	5.8
25	49-40 x S. Dak. H2-7	.84	1.46	.43	.19	1.49	4.75	3.64	5.53	3.85	24	2.3
20	49-18 x S. Dak. H2-7	1.20	1.97	.52	.25	2.02	4.60	3.86	5.75	4.06	39	5.3
24	49-40 x S. Dak. H2-5	1.07	1.47	.27	.13	1.54	4.51	3.51	5.31	3.72	20	3.7
19	49-18 x S. Dak. H2-5	1.46	2.51	.71	.34	2.49	4.54	3.73	6.17	4.23	62	8.0
2	49-40 x Iowa 42	.96	1.36	.29	.11	1.39	4.75	4.14	5.37	3.91	15	2.3
1	49-18 x Iowa 42	1.51	2.53	.67	.34	2.53	5.10	4.04	6.32	4.50	62	7.5
4	49-40 x Iowa 187-7	1.16	2.20	.72	.32	2.16	4.63	3.44	5.62	3.96	73	4.5
3	49-18 x Iowa 187-7	1.57	2.67	.72	.38	2.69	4.93	4.36	6.38	4.59	80	7.0
10	49-40 x Nebr. 1740	1.36	2.29	.64	.28	2.12	4.86	3.85	5.91	4.18	41	5.5
9	49-18 x Nebr. 1740	1.46	2.52	.66	.40	2.44	4.82	4.01	5.83	4.27	69	7.5
12	49-40 x Nebr. 1996	.95	1.63	.49	.19	1.67	4.78	3.64	5.44	3.88	37	3.5
11	49-18 x Nebr. 1996	1.41	2.44	.68	.35	2.35	4.99	4.50	6.26	4.53	70	7.0
22	49-40 x Pa. 53-13	1.50	2.74	.77	.46	2.66	5.06	4.16	6.26	4.53	73	7.7
17	49-18 x Pa. 53-13	1.52	2.59	.67	.39	2.52	4.69	3.97	6.32	4.37	75	7.3
23	49-40 x Pa. 53-19	1.65	2.83	.77	.40	2.83	5.09	4.34	6.03	4.57	72	7.3
18	49-18 x Pa. 53-19	1.24	2.00	.53	.23	2.03	4.84	3.85	6.15	4.22	57	5.2
14	49-40 x Nev. C902	1.17	2.08	.62	.29	2.07	4.33	3.45	5.86	3.93	68	5.0
13	49-18 x Nev. C902	1.31	2.50	.75	.43	2.48	4.47	3.60	5.92	4.12	72	6.3

Table 10.--1958 Alfalfa U.S.D.A. Singlecross Test (cont.)
 Location: W. Lemkin Field 1962 Data and 1959-62 Summary

Random Number	Entry	Yield-Tons/Acre (12% M)			1962 Adj.	Adj. Season Total Yields		59-61 Average	% Stand 10/15	Gen'l. 6/7*
		6/7	7/20	9/5		1959	1961			
21	49-40 x N.C. 4	1.39	.24	.57	2.21	4.83	3.96	4.25	54	5.3
16	49-18 x N.C. 4	1.93	.56	.90	3.38	5.01	4.44	4.74	75	8.3
15	49-18 x 49-40	1.47	.41	.73	2.62	5.01	4.31	4.44	82	7.7
26	49-40 x N.C. 42	1.39	.35	.65	2.39	5.19	4.67	4.68	70	7.0
27	49-18 x C 89	1.51	.44	.72	2.67	4.33	4.02	4.37	76	8.2
28	Mass. Polycross 1	1.28	.39	.64	2.32	4.65	4.04	4.28	47	5.5
29	Mass. Polycross 2	1.39	.46	.79	2.64	5.19	4.11	4.45	60	6.7
30	Ranger F.C. 34043	1.23	.24	.51	1.98	4.70	3.70	4.11	50	4.3
31	Vernal F.C. 34104	1.67	.39	.71	2.77	5.27	4.24	4.57	67	6.8
32	C 902 x N.Y. 49-40	1.18	.27	.50	1.95	4.44	3.75	3.96	61	4.0
33	Narragansett F.C. 34045	1.61	.38	.64	2.64	5.22	4.38	4.58	62	6.7
34	Buffalo F.C. 34042	1.46	.41	.78	2.65	4.49	3.69	4.31	70	6.7
35	Atlantic F.C. 34044	1.34	.35	.62	2.30	4.89	4.13	4.42	67	6.0
36	DuPuits 58-46	1.17	.30	.57	2.04	5.13	4.11	4.48	68	6.0
Average		1.31	.32	.62	2.25	4.80	3.94	4.23		
F - Varieties (RCB)		7.83**	4.16**	3.55**	8.14**	2.61**	4.06**	4.77**		
L.S.D. (P=.05)		.26	.15	.23	.48	.57	.41	.46		
C.V. %		17.2	39.8	32.2	18.8					
Ave. D.M.%		27.8	33.9	22.3						
Ave. of NY 49-40 in Single x's		1.14	.24	.52	1.90	4.74	3.75	4.01	42	4.4
Ave. of NY 49-18 in Single x's		1.41	.35	.67	2.43	4.79	4.01	4.32	64	6.7

**General rating for stand and vigor. Field differences in appearance were very wide.

Table 11.--1958 Alfalfa Variety Trial
Location: W. Lamkin Field, Ithaca, N.Y. 1962 Data

Management: 3 cuts/season

Random Number	Entry	N.Y. Seed Number	Yield - Tons per Acre (12 % M)				Season Total	Ave. D.M. %	Notes:
			1st cut 6/8	2nd cut 7/26	3rd cut 9/7	3rd cut 9/7			
1	Gillon	58-35	.73	.11	.30	.30	1.14	29.5	1. Drouth very serious on this site. Low yield partly due to 2 seasons with conditions conducive to winter injury.
2	FD - 100	58-36	.83	.16	.34	.34	1.33	30.7	
3	GPR - 2	58-34	.81	.19	.55	.55	1.55	30.1	
4	Socheville	58-28	.96	.27	.49	.49	1.73	29.6	
5	Alfa	58-29	.80	.11	.27	.27	1.18	29.3	
6	Alfa	58-2	.69	.07	.25	.25	1.02	30.3	2. Stands quite reduced but sett indicates of Narragansett injury as important as winter reduction of stands here.
7	Alfa	57-51	.97	.16	.42	.42	1.55	28.2	
8	Alfa	57-56	.98	.20	.44	.44	1.62	28.5	
9	Cardinal	58-3	.80	.14	.40	.40	1.35	30.0	
10	Cardinal	57-57	.82	.19	.40	.40	1.42	29.2	
11	DuPuits	58-46	.97	.13	.35	.35	1.46	28.1	1958-59 and 1961-62.
12	DuPuits	58-18	.85	.21	.45	.45	1.50	29.5	
13	Vernal	58-16	.91	.25	.51	.51	1.68	28.1	
14	Vernal	58-47	.95	.19	.50	.50	1.63	28.8	
15	P.I. 246356	58-37	.76	.20	.53	.53	1.49	27.5	
16	N.Y. Syn. A-57	58-1	1.16	.22	.63	.63	2.01	28.9	Sett indicates of Narragansett injury as important as winter reduction of stands here.
17	N.Y. Syn. A-56	57-10	1.36	.29	.65	.65	2.31	28.0	
18	N.Y. Syn. B-56	57-8	1.24	.27	.71	.71	2.23	28.5	
19	Ranger	58-17	.72	.19	.54	.54	1.46	28.6	
20	Narragansett	58-19	1.29	.34	.64	.64	2.27	27.3	
21	Narragansett	58-20	1.16	.24	.51	.51	1.90	26.9	Average
22	Narragansett	58-4	1.22	.27	.61	.61	2.09	26.8	
23	Narragansett	58-14	.99	.29	.58	.58	1.86	27.8	
24	Narragansett	58-23	1.08	.28	.52	.52	1.88	26.0	
25	Narragansett	57-50	1.00	.21	.44	.44	1.64	27.8	
26	Average		.96	.21	.48	.48	1.65	28.6	F - Varieties L.S.D. (P = .05) C.V. (%) Ave. D.M. %
	F - Varieties		3.43**	4.30**	4.47**	4.47**	5.15**	1.75	
	L.S.D. (P = .05)		1.28	.09	.16	.16	.42	2.5	
	C.V. (%)		23.6	34.4	26.9	26.9	20.8	7.0	
	Ave. D.M. %		28.6	33.7	22.4	22.4			

Table 12.--1959 Alfalfa Variety Trial - Helfer Field #1
Management: 3 cuts/season 1962 Data

Random Number	Entry	N.Y. Number	Yield - Tons per Acre					Ave. D.M. %	8/31
			1st cut 6/6	2nd cut 7/19	3rd cut 8/31	Season Total	6/6		
1	F-D 100	59-6	1.56	.99	1.04	3.60	25.1	30.0	8/31
2	Flandria	59-27	1.54	.97	1.12	3.64	24.9	30.6	23.9
3	NK - 505	59-4	1.44	.90	.99	3.33	24.5	30.5	24.0
4	NP - 502	59-28	1.61	.98	1.14	3.72	25.4	30.7	23.7
5	NP - 503	59-29	1.31	.66	.87	2.83	25.7	31.7	23.9
6	NP - 504	59-30	1.48	.79	1.06	3.33	24.5	30.4	23.4
7	Ross #2	59-26	1.09	.71	.87	2.68	25.1	31.6	22.5
8	Alfa	59-23	1.68	.99	1.10	3.76	24.1	30.2	24.3
9	DuPuits	59-22	1.42	.88	1.01	3.30	24.4	30.8	23.4
10	Ranger	59-21	1.20	.57	.76	2.53	25.8	31.7	24.2
11	Socheville	59-24	1.51	.91	1.05	3.48	25.4	30.9	23.3
12	Narragansett	59-19	1.66	.95	1.05	3.67	24.6	30.0	23.2
13	Syn. A	58-1	1.60	.75	.99	3.34	25.6	31.4	22.0
14	Syn. B	57-8	1.45	.78	1.06	3.29	25.0	30.9	23.8
15	Vernal	59-20	1.49	.78	.91	3.18	25.5	33.7	23.4
16	High Seed Narr. (Wym.)	58-4	1.50	.77	.93	3.20	25.3	30.3	23.5
17	High Seed Narr. (Cal.)	59-31	1.65	.91	1.01	3.58	25.1	30.9	23.0
18	Tuna Alf.	59-	1.47	.83	.89	3.19	25.1	31.8	23.2
Average									
F - Varieties			1.48	.84	.99	3.31	25.1	31.0	23.4
L.S.D. (P = .05)			3.40**	5.13**	4.10**	4.38**	1.68-	2.73**	3.05**
C.V. %			.24	.15	.14	.47	1.0	1.0	1.1
			14.0	16.2	12.2	12.4	3.6	2.8	4.1

Notes: (1) 3rd year yields on this trial appreciably less in this dry year than 1st year yields on adjacent trials. Discrepancy greater than would be expected from stand differences. This may reflect too low a fertility level on this soil for the magnitude of yield obtained in 1961.

(2) Only a very few plants observed that possibly could be affected by wilt - much less than in similar aged trial on McGowan field.

Table 13.--1959 Alfalfa Variety Trial

Location: McGowan Field, Ithaca, N.Y. 1962 Data and 1960-62 Summary

Management: 3 cuts/ season

Random Number	Entry	N.Y. Number	Yield - Tons per Acre (12%M)		Total	Adj. Total Yields		% Stand
			6/4	7/16	8/30	1962	1960 (50-62 Ave.)	
1	F-D 100	59-6	1.41	.64	.75	2.81	2.82	31
2	Flandria	59-27	1.84	1.03	1.05	3.92	3.87	44
3	NK-505	59-4	1.65	.78	.86	3.29	3.50	41
4	NP-502	59-28	1.78	1.04	1.26	4.08	3.99	57
5	NP-503	59-29	1.91	.81	1.04	3.76	4.05	58
6	NP-504	59-30	1.87	1.01	1.30	4.18	4.10	70
7	Ross #2	59-26	1.37	.55	.85	2.78	2.80	42
8	Alfa	59-23	1.64	.69	.79	3.13	2.99	25
9	Alfa	58-2	1.74	.73	.78	3.25	3.36	23
10	DuPuits	59-22	1.50	.69	.79	2.93	2.86	23
11	DuPuits	58-49	1.71	.94	1.01	3.65	3.61	38
12	V-66 D.B.	59-7	1.71	.94	1.03	3.68	3.83	56
13	Narr. select - D.B.	59-17	1.87	1.00	1.21	4.08	3.92	59
14	Vernal select - D.B.	59-18	1.99	1.00	1.25	4.25	4.24	64
15	Ranger	59-21	1.79	1.03	1.35	4.17	4.21	72
16	Medicago glutinosa	59-25	1.64	.76	.90	3.30	3.35	41
17	Socheville	59-24	1.75	.97	1.06	3.77	3.77	44
18	Narragansett	59-19	1.98	.97	1.25	4.20	4.25	50
19	Narragansett	58-20	1.85	.97	1.12	3.94	3.84	54
20	Syn. A	58-1	2.14	1.15	1.32	4.61	4.67	79
21	Syn. B	57-8	2.08	1.18	1.45	4.72	4.60	75
22	Vernal	59-20	1.94	.99	1.29	4.22	4.25	70
23	Vernal	58-16	1.93	.97	1.26	4.16	4.12	68
24	High Seed Narr. Wyo.	58-4	1.97	1.06	1.38	4.32	4.25	62
25	High Seed Narr. Cal.	59-31	2.07	1.12	1.29	4.47	4.44	65
Average			1.80	.92	1.10	3.83	3.83	5.25
F - Varieties			6.23**	3.76**	6.55**	6.09**		
L.S.D. (P=.05)			.22	.24	.23	.62	.39	.16
C.V. (%)			10.8	22.8	18.4	14.3		
Ave. D.M. (%)			27.7	29.6	23.1			
Effic. %						132	100	

Table 14.--1960 Alfalfa Variety Trial - Pullevn Field, Ithaca

Management: 3 cuts / Season			1962 Data					Total Alf. Fraction (RCB)
Random No.	Entry	N.Y. No.	Total Yield- Tons/Acre (12% M)		Season Total		Total Adj.	
			6/11	7/26	9/7	Total		% Alfalfa 6/11
1	N.Y. Syn. A	60-18	1.11	.20	.51	1.81	1.71	76
2	N.Y. Syn. B	60-19	.91	.19	.55	1.65	1.58	79
3	H.S. Narrag.	60-20	1.19	.23	.53	1.95	2.00	82
4	W.R. Narrag.	60-21	1.20	.15	.43	1.77	1.90	89
5	W.R. Flemish	60-22	1.15	.30	.71	2.15	2.10	91
6	N.Y. Syn. C	60-1	.91	.19	.46	1.56	1.56	74
7	Ross #2	60-2	.91	.23	.44	1.58	1.67	61
8	Beard - 16 cl HIK	60-3	1.02	.15	.40	1.56	1.57	62
9	Tuna	60-4	.93	.19	.50	1.62	1.63	60
10	Arnim	60-5	.86	.19	.46	1.51	1.60	63
11	Flandria	60-6	1.04	.21	.53	1.78	1.87	89
12	FD-100	59-6	1.15	.28	.58	2.01	1.97	97
13	FD-100	60-28	.94	.20	.47	1.61	1.75	85
14	GPR-1	60-12	1.08	.24	.68	1.99	2.04	88
15	Socheville	59-24	1.35	.44	.73	2.52	2.36	87
16	Narr.-Syn. 2	60-23	1.24	.27	.66	2.17	2.16	93
17	Narr.-Syn. 2	60-24	1.07	.24	.52	1.83	1.84	86
18	Narr.-Syn. 2	60-25	1.13	.21	.56	1.90	1.75	80
19	Narr.-Syn. 1	(Garden)	1.17	.25	.56	1.98	1.89	88
20	Narragansett	59-19	1.20	.21	.53	1.93	1.88	88
21	Vernal	60-26	.87	.12	.40	1.40	1.56	82
22	Ranger	60-13	.74	.15	.33	1.22	1.12	54
23	DuPuits	60-17	1.15	.33	.63	2.11	2.11	90
24	Alfa	60-15	1.02	.22	.45	1.69	1.78	84
25	Narragansett	60-14	1.08	.20	.51	1.79	1.71	60
Ave.			1.06	.22	.53	1.80	1.80	
F-Var.			3.64**	2.13*	2.43*	3.16**		
L.S.D. (P=.05)			.21	.13	.18	.14	.37	
C.V. %			17.5	49.5	29.9	21.4	147.0	
Effic. %								

Note: Establishment was very critical on this trial due to drought - yields are highly related to seedling vigor of the strains, rather than yield potential.

Table 15.---1961 Alfalfa Variety Trial - Ketola Field - Ithaca
Mgt.: 3 cuts/season 1962 Data - 6 reps.

Yield - Tons per Acre (12% M)

Random Number	Entry	N.Y. Seed Lot#	1st cut 6/7	2nd cut 7/20	3rd cut 9/6	Total Season (ROB)	Total (Adj.)	Notes:
1.	Multiple-leaf Bulk	61-60	1.77	.75	1.13	3.66	3.64	
2.	Hi-seed Narrag, Idaho-60	61-43	1.71	.71	1.07	3.48	3.61	(1) Very good and uniform stands.
3.	Hi-seed Narrag, Calif.-60	61-45	1.69	.73	1.04	3.45	3.54	
4.	Hi-seed Narrag, Bulk-Cal.60	61-63	1.71	.75	.96	3.43	3.46	
5.	W.R. Narrag.	60-21	1.70	.75	1.03	3.48	3.39	(2) 1962 season critically dry at site.
6.	Cayuga, Cal.-59	60-19	1.65	.68	1.02	3.35	3.34	
7.	Cayuga-Breeders, Idaho-60	61-44	1.59	.69	.98	3.26	3.31	
8.	Arnim	60-5	1.66	.82	.96	3.44	3.43	
9.	G FR-I	60-12	1.74	.78	1.04	3.56	3.60	(3) Cody gave very poor performance.
10.	F. D. 100	60-23	1.77	.82	1.09	3.68	3.69	
11.	W. R. Flemish	60-22	1.79	.88	1.16	3.83	3.82	(4) Multiple-leaf entry was visibly better than Narragansett in last harvest.
12.	Flandria - Fr. Cert.	61-57	1.82	.89	1.17	3.88	3.85	
13.	Flandria - Cal. -60	61-58	1.69	.80	1.04	3.53	3.60	
14.	Flandria - Basic 60	61-59	1.71	.81	1.12	3.64	3.71	
15.	De-Puits	61-53	1.75	.84	1.11	3.69	3.78	
16.	Vernal-Cert.	61-52	1.75	.71	1.05	3.51	3.50	
17.	Narrag-Cert.	61-51	1.76	.77	1.01	3.54	3.59	
18.	NK -507	61-51	1.85	.89	1.13	3.87	3.69	
19.	NK -508	61-50	1.60	.87	1.09	3.56	3.59	
20.	Culver	61-64	1.50	.66	.98	3.14	3.16	
21.	Cody	61-65	1.32	.70	.90	2.93	2.88	
22.	NY-607	61-6	1.65	.71	1.05	3.41	3.33	
23.	NY-608	61-7	1.47	.65	.98	3.10	3.13	
24.	NY-609	61-8	1.72	.75	.96	3.43	3.57	
25.	NY-610	61-9	1.68	.76	1.06	3.50	3.40	
	Average		1.68	.77	1.05	3.49	3.44	
	F - Varieties		7.83**	2.10*	3.59**	6.13**	.25	
	L.S.D. (P=.05)		.14	.10	.126	.26		
	C.V. (%)		6.0	15.7	8.6	6.4		
	Ave. DM %		26.1	34.2	25.2		EFF. 141%	

Table 16.--1961 Alfalfa Variety Trial - Jefferson Co.
Location: Pierreport Manor, N.Y. 1962 Data

Random Number	Entry	New York Seed Lot #	Yield - Tons per Acre			% Alfalfa		Total Alfalfa Fraction	% Stand
			1st cut	2nd cut	3rd cut	6/14	8/2		
			6/14	8/2	9/11	6/14	8/2	9/11	8/2
1	Multiple-leaf-Bulk	61-60	2.00	1.09	1.23	35	72	87	74
2	H1-Seed Narr.--Idaho	61-43	1.78	.86	1.01	37	66	84	65
3	W. R. Narrag.	60-21	1.86	.69	.93	24	56	72	52
4	Cayuga-Cal.-59	60-19	1.91	.67	.94	23	51	70	50
5	Ca78ga-Breeders-60	61-44	1.72	.55	.86	12	44	62	40
6	NK-507	61-51	1.96	.92	1.29	28	64	86	63
7	NK-508	61-50	1.94	.96	1.22	38	63	88	69
8	Culver	61-64	1.89	.71	.88	16	52	68	45
9	Vernal (Cert.)	61-52	1.91	.89	1.02	32	60	80	60
10	Narrag. (Cert.)	61-54	1.91	.72	.93	23	62	75	58
11	Arnim	60-5	2.06	.80	1.08	27	61	83	56
12	A58-9 (9,19,40,55) Syn 2	61-39	1.78	.70	.99	21	51	70	49
13	NY627 (55x91)SC	61-26	1.69	.53	.82	18	50	74	47
14	NY623 (40x55)SC	61-22	1.76	.42	.73	16	40	62	32
15	NY614 (72x75)x(55x91) DC	61-13	1.84	.84	.95	32	62	83	64
16	NY607 (14,18,40,55) Syn 2	61-6	1.73	.67	.98	21	51	75	46
17	NY608 (9,19,40,55) Syn 2	61-7	1.76	.59	.90	21	54	74	49
18	NY610 (691,18,40,72) Syn 2	61-9	1.74	.56	.72	16	47	60	41
19	Ranger	61-55	1.58	.46	.65	12	40	58	34
20	DuPuits	61-53	1.97	1.05	1.13	42	68	91	65
21	F.D. 100	60-38	1.82	1.13	1.20	48	73	93	73
22	W.R. Flemish	60-22	1.92	.95	1.22	33	67	84	63
Ave.			1.84	.76	.99				
F-Entries			1.11	3.69**	4.19**				
L.S.D. (P=.05)			.31	.30	.24				
C.V. (%)			13.4	30.9	19.7				

Notes: (1) Poor growth response by alfalfa in a very favorable season; not known whether this is due to pH, heavy timothy and grass competition or poor inoculation. More vigorous strains came on better at end of summer but all entries were variable.

(2) Yields, composition and stand all reflect a critical establishment situation in which drainage was not a prime factor. Some entry differences reflect position, but seed lot differences in hard seed (no value here) and selfed or sibbed seed in the experimentals was very probably a factor.

Table 17. -- 1959 Flemish Alfalfa Seed Source Test
Location - McGowan Field Planted 5/5/59
1962 Data and 1960-62 Summary

NEW YORK - Ithaca

Random Number	Entry	N.Y. Number	Grams Seed	% DM 6/11	Yield Tons/Acre (12%M)				Season Total	1961 Total	1960 Total	60-62 Ave.
					6/11	7/16	8/30					
1	DuPuits (Elite) 59	59-1	9.7	28.9	1.11	.40	.41	1.93	6.75	5.81	4.83	
2	DuPuits (Elite) 59	59-2	13.6	27.8	1.48	.64	.55	2.67	7.01	5.70	5.12	
3	DuPuits (Elite) 58	58-45	13.4	28.4	1.23	.52	.47	2.22	7.22	6.00	5.14	
4	DuPuits (Cert.) 58	58-49	10.0	28.3	1.26	.44	.50	2.20	6.93	5.91	5.01	
5	DuPuits (Cert.) 59	59-22	10.1	28.3	1.23	.45	.44	2.12	6.51	6.24	4.95	
6	DuPuits (Cert.) 58	58-48	10.7	28.9	1.24	.37	.36	1.97	6.65	5.74	4.78	
7	Alfa-Stock-Sweden 58	58-44	12.0	29.1	.88	.25	.25	1.37	6.87	5.81	4.68	
8	Alfa-Stock #027514	59-3	9.7	28.3	1.28	.48	.51	2.27	7.15	6.16	5.19	
9	Alfa-Stock #027509	59-5	12.3	28.9	1.25	.38	.44	2.06	6.71	5.91	4.89	
10	Alfa-Skandia Blond ALB-2	59-9	11.0	28.6	1.12	.40	.42	1.94	6.94	5.85	4.91	
11	Alfa-Skandia, Camp-B578	59-8	11.1	28.2	1.21	.47	.52	2.20	6.75	6.15	5.03	
12	Alfa-Skandia, Camp-B566	59-10	10.8	27.1	1.34	.61	.53	2.49	6.95	5.87	5.10	
13	Alfa-Skandia, Camp-B580	59-11	10.9	27.4	1.20	.42	.43	2.04	6.75	5.73	4.84	
14	Alfa-Skandia, Leonard-B561	59-12	10.5	29.7	1.26	.38	.38	2.02	6.86	5.79	4.89	
15	Alfa-Skandia, C+C -B404	59-13	11.0	26.9	1.27	.49	.44	2.20	6.43	5.87	4.83	
16	Alfa-Skandia, Camp K-2	59-14	9.3	28.3	1.45	.53	.48	2.46	6.99	5.92	5.12	
17	Alfa-Skandia, Camp K-1	59-15	12.1	26.8	1.36	.51	.55	2.42	6.86	5.97	5.08	
18	Alfa-Skandia Export, Suckut	59-16	12.0	27.6	1.50	.67	.61	2.77	6.76	5.90	5.14	
19	Alfa-GLF 59, P1826	59-23	11.4	28.1	1.18	.38	.38	1.95	6.82	5.83	4.86	
20	Alfa-Stock #1279-Sweden 59	59-32	12.8	28.1	1.45	.53	.44	2.42	6.98	6.35	5.24	
Average												
F - Entries												
L.S.D. (P=.05)												
C.V. %												
					28.2	1.27	.46	2.19	6.84	5.93	4.98	
					.60 -	.51 -	.67 -	.55 -	1.44	1.27		
					2.7	.56	.34	1.18	.45			
					7.7	36.1	59.0	48.9	5.3	5.8		

Notes: (1) moisture gradient within reps. in 1962 was unbelivable after the high degree of precision obtained in 1st 2 years in this trial.

Table 18.--1960 Flemish Alfalfa Seed Source Test
Location: Snyder Field 1962 Data

Yield - Tons/Acre (12% M)

Random No.	Entry	Seed Class	N.Y. No.	1st cut 6/4	2nd cut 7/16	3rd cut 8/31	Total Season	% DM 6/4
1	DuPuits	Elite	60-9	1.70	1.44	1.29	4.44	27.1
2	DuPuits	Elite	60-10	1.65	1.42	1.33	4.40	26.4
3	DuPuits	Elite	59-1	1.72	1.31	1.09	4.11	29.0
4	DuPuits	Elite	59-2	1.77	1.36	1.15	4.28	27.6
5	DuPuits	Elite	58-45	1.64	1.47	1.18	4.29	26.8
6	DuPuits	Cert.	60-17	1.71	1.42	1.22	4.35	27.6
7	DuPuits	Cert.	59-22	1.72	1.36	1.15	4.23	27.0
8	W. R. Flemish	-	60-22	1.70	1.51	1.44	4.65	26.6
9	Alfa	Fd.	60-7	1.78	1.27	1.08	4.13	27.9
10	Alfa	Fd.	60-8	1.76	1.33	1.10	4.19	27.3
11	Alfa	Fd.	58-44	1.73	1.33	1.11	4.17	27.5
12	Alfa	Fd.	59-5	1.85	1.46	1.14	4.45	26.9
13	Alfa		60-15	1.71	1.26	.97	3.94	28.5
14	Alfa		59-23	1.79	1.37	1.07	4.23	26.9
15	F. D. - 100		60-28	1.62	1.19	.96	3.77	28.1
16	Socheville		59-24	1.68	1.40	1.20	4.28	28.5
17	GPR - 1		60-12	1.71	1.23	1.05	3.99	28.9
18	Flandria		60-6	1.61	1.38	1.24	4.22	27.4
19	NK - 505		59-4	1.73	1.47	1.21	4.41	27.3
Ave.				1.71	1.36	1.15	4.23	27.5
F - Var.				1.25-	1.44-	2.25**	1.63	1.96*
L.S.D. (P = .05)				.15	.21	.20	.45	1.5
C.V. %				7.1	12.2	15.3	8.4	4.4

Notes: Excellent growth with very few weeds. Dry condition cut production. There were height differences at last cutting, these are not necessarily reflected in yield. There were a few indications of wilt showing up in last growth although conditions were not favorable for symptoms. This is probably the reason for higher yield on W. R. Flemish.

Table 19.--1961 Flemish Seed Source Trial
 Location: Helfer Field #2 1962 Data
 Mgt.: 3 cuts/season

			Yield - Tons per Acre (12% M)					
Random Number	Entry	N.Y. No.	6/8	7/19	9/4	Season Total	Ave. % D.M. 6/8	
1	Flandria	60-6	2.46	1.30	1.50	5.26	26.2	
2	Flandria	61-57	2.34	1.32	1.48	5.15	25.4	
3	Flandria	61-59	2.42	1.23	1.40	5.04	26.9	
4	F D-100	59-6	2.35	1.27	1.40	5.02	26.2	
5	F D-100	60-28	2.40	1.38	1.47	5.25	25.0	
6	DuPuits-Elite	61-66	2.39	1.34	1.51	5.24	26.9	
7	"	59-1	2.40	1.30	1.46	5.15	26.3	
8	"	60-9	2.60	1.41	1.53	5.54	26.8	
9	"	61-46	2.45	1.40	1.51	5.30	25.9	
10	Alfa-Fd.	58-44	2.54	1.30	1.45	5.29	26.1	
11	Alfa-Fd.	59-5	2.47	1.29	1.46	5.21	25.0	
12	Alfa-Elite	60-11	2.44	1.20	1.41	5.05	26.4	
13	Alfa-Fd.	60-7	2.40	1.21	1.39	5.01	25.6	
14	Alfa-Fd.	60-8	2.57	1.26	1.41	5.24	25.9	
15	Alfa-Breeders	61-61	2.40	1.22	1.36	4.98	25.6	
16	Alfa	61-48	2.49	1.25	1.44	5.17	26.1	
17	Alfa	61-49	2.55	1.27	1.43	5.25	26.2	
Average			2.45	1.29	1.45	5.20	26.0	
w ² n = entries			.71-	1.52-	1.34-	1.91-	1.17-	
L.S.D. (P = .05)			.25	.14	.12	.42	1.5	
C.V. (%)			8.3	8.8	6.6	6.5	4.5	

Notes: Excellent growth and stands on all entries. No visible strain differences.

Table 20.--1960 Hi Seed Narragansett Breeders Seed Lots and Components Trial
Location: Snyder Field 1962 Data

Random Number	Entry	N.Y. No.	Total Yield - Tons/Acre (12% M)				% D.M. 6/4
			1st cut 6/4	2nd cut 7/16	3rd cut 8/31	Season Total	
1	PCP W-7		1.68	1.24	1.30	4.22	28.7
2	" W-8		1.71	1.18	1.23	4.12	27.5
3	" W-10		1.52	1.18	1.14	3.84	28.3
4	" W-11		1.79	1.43	1.33	4.56	27.6
5	" W-15		1.60	1.23	1.23	4.06	26.9
6	PCP W-27		1.54	1.12	1.27	3.92	28.3
7	" W-30		1.69	1.31	1.35	4.35	27.1
8	" W-32		1.94	1.29	1.18	4.40	27.7
9	" W-42		1.81	1.25	1.33	4.39	26.8
10	" W-43		1.72	1.27	1.33	4.32	26.7
11	Bulk-Syn. 1	60-29	1.79	1.28	1.30	4.38	27.6
12	Garden Syn. 2	60-23	1.74	1.21	1.26	4.20	27.0
13	Calif. Syn. 2	60-20	1.62	1.18	1.30	4.10	28.0
14	Helper Syn. 2	60-24	1.65	1.28	1.22	4.14	28.5
15	W. Lan kin Syn. 2	60-25	1.66	1.27	1.30	4.24	27.9
16	W. R. Narrag	60-21	1.72	1.23	1.24	4.18	28.8
17	Narrag (Cert.)	59-19	1.73	1.38	1.37	4.48	28.3
18	Narrag (Cert.)	60-14	1.78	1.33	1.38	4.49	28.2
Ave.	"F"-Entries		1.71	1.26	1.28	4.25	27.8
	L.S.D. (P=.05)		3.12**	2.03*	1.85*	2.40**	1.78*
	C.V.%		.16	.15	.14	.35	1.4
			8.2	10.4	9.4	7.2	4.4

Table 21.--1960 Atlantic Region of Adaptation Trial
Location: Snyder Field 1962 Data

Random Number	Entry	N.Y. Number	Yield - Tons/Acre (12%M)				% D.M. 6/4
			1st cut 6/4	2nd cut 7/18	3rd cut 8/31	Season Total	
1	FD.-WYOM (1953)	60-54	1.96	1.66	1.60	5.22	25.5
2	Reg.-CAL. (1954)	60-55	1.89	1.70	1.55	5.15	25.6
3	Reg.-UTAH (1954)	60-56	2.03	1.64	1.62	5.29	25.0
4	Reg.-ARIZ. (1954)	60-57	1.98	1.64	1.47	5.10	25.5
5	Reg.-OKLA. (1954)	60-58	1.88	1.65	1.51	5.03	25.8
6	CERT.-WYOM. (1956)	60-59	1.82	1.53	1.57	4.93	25.6
7	Reg.-OKLA. (1955)	60-60	1.88	1.61	1.55	5.04	25.0
8	Reg.-ARIZ. (1955)	60-61	1.85	1.62	1.43	4.90	26.9
9	Reg.-ARIZ. (1956)	60-62	1.90	1.66	1.58	5.14	25.9
10	Reg.-ARIZ. (1957)	60-63	1.82	1.57	1.60	4.99	25.6
11	Reg.-ARIZ. (1958)	60-64	1.98	1.79	1.67	5.45	24.7
12	Reg.-ARIZ. (1958)	60-65	1.92	1.59	1.50	5.01	25.9
13	FD.-WYOM. → Reg. UTAH (1954)	60-66	1.99	1.69	1.58	5.25	25.5
14	(1953)	60-67	1.92	1.61	1.53	5.06	26.3
15		60-68	1.77	1.60	1.49	4.87	27.2
16	CERT. (CAL. -58)	60-69	2.03	1.59	1.59	5.21	25.9
	Average		1.92	1.62	1.55	5.09	25.5
	F-Varieties		1.44	1.10	2.19	1.81*	1.09 -
	L.S.D. (P=0.05)		.18	.16	.12	.31	1.7
	C.V. %		7.4	7.8	6.0	5.0	5.4

Table 22.--1960 Ranger Region of Adaptation Test
Snyder Field - 1962 Data

Total Yield - Tons/Acre (12% M)

Random Number	Entry	N. Y. No.	6/4	7/18	8/30	Season Total	Adj. Total (Lattice)	Mean + Yield on 5/4	D.M.
1	FC 32,119	60-30	1.71	1.33	1.50	4.54	4.62	FO-Nbr.	25.8
2	FC 32,120	60-31	1.66	1.32	1.51	4.49	4.55	Reg-Cat (54)	25.9
3	FC 32,131	60-32	1.56	1.25	1.42	4.24	4.34	Breeder	27.1
4	FC 32,669	60-33	1.51	1.25	1.40	4.17	4.35	Reg-Ang (54)	25.9
5	FC 32,693	60-34	1.89	1.58	1.59	5.06	4.68	Reg-Ang (54)	24.5
6	FC 32,786	60-35	1.56	1.28	1.49	4.32	4.47	Components	26.8
7	FC 32,787	60-36	1.93	1.53	1.51	4.97	4.86	A-110 (53)	24.1
8	FC 32,788	60-37	1.63	1.36	1.50	4.50	4.46	A-116 (53)	26.0
9	FC 32,789	60-38	1.67	1.38	1.48	4.53	4.47	A-117 (53)	26.0
10	FC 32,790	60-39	1.53	1.28	1.49	4.31	4.50	A-119 (53)	26.2
11	FC 33,290	60-40	1.73	1.49	1.54	4.75	4.61	A-111 (55)	25.3
12	FC 33,836	60-41	1.64	1.40	1.54	4.59	4.53	Cat-mint (57)	25.6
13	FC 33,837	60-42	1.76	1.46	1.59	4.81	4.73	Cat-mint (57)	24.6
14	FC 33,838	60-43	1.55	1.27	1.54	4.36	4.57	Cat-mint (57)	27.4
15	FC 34,193	60-44	1.92	1.44	1.55	4.92	4.86	Cat-mint (58)	24.8
16	FC 34,194	60-45	1.65	1.35	1.51	4.51	4.48	Reg-mint (58)	25.8
17	FC 34,959	60-46	1.71	1.39	1.52	4.62	4.57	Reg-mint (59)	25.8
18	FC 35,290	60-47	1.89	1.53	1.55	4.97	4.69	Ang. (60)	24.2
19	FC 35,291	60-48	1.93	1.47	1.59	4.99	5.06	Ang (60)	24.5
20	FC 35,292	60-49	1.59	1.28	1.51	4.38	4.24	Ang (60)	26.3
21	FC 35,293	60-50	1.72	1.35	1.49	4.56	4.61	Ang (60)	25.8
22	FC 35,294	60-51	1.81	1.51	1.54	4.87	4.99	Ang (60)	23.9
23	FC 35,362	60-52	1.66	1.44	1.49	4.58	4.56	Cat-mint	25.9
24	FC 34,628	60-53	1.60	1.35	1.55	4.50	4.57	Commercial Cat	26.5
25	Cert.	60-13	1.65	1.43	1.57	4.65	4.60		25.5
	Average (RCB) F - Varieties		1.70	1.39	1.51	4.60	4.60		25.6
	L.S.D. (P=.05)		1.25	1.23	1.05	1.31			1.28
	C.V. %		13.1	12.5	12	16.2	1.50		2.3
	Effic. (%)		16.3	15.5	7.0	11.7	1.55		7.9

Table 23.--1960 Alfalfa Demonstration Trial - Caldwell IV

Fall Seeding: 18# / Acre 1962 Data

Management: 2 Cuts in 1961; 3 in 1962

Random Number	Entry	N.Y. No.	Total Yield - Tons/Acre (12%M)				% Alfalfa 6/11	% D.M. 6/11
			1st cut 6/11	2nd cut 7/20	3rd cut 9/	Season Total		
1	Vernal	60-26	2.41	.87	1.34	4.61	51	26.4
2	Narragansett	60-14	2.56	.93	1.40	4.89	66	26.2
3	DuPuits	60-17	2.24	1.03	1.43	4.69	88	24.1
4	Alfa	60-15	2.33	.95	1.40	4.67	91	26.0
5	Ranger	60-13	2.16	.78	1.39	4.32	44	27.1
6	N.Y. Syn. B	60-19	2.33	.94	1.47	4.74	53	26.2
7	H.S. Narrag.-Calif.	60-20	2.43	.92	1.49	4.84	64	25.0
8	H.S. Narrag.-Garden	60-23	2.42	.96	1.65	5.03	83	24.5
9	H.S. Narrag.-Helfer	60-24	2.45	.94	1.37	4.76	74	24.7
10	W.R. Narrag.	60-21	2.48	.98	1.53	4.99	71	25.0
11	W.R. Flemish	60-22	2.52	1.07	1.61	5.21	82	25.8
12	N.Y. Syn. A	60-18	2.52	.82	1.53	4.87	53	26.2
Average								
			2.40	.93	1.47	4.80		25.3
F-Entries			2.45*	3.01**	3.23**	3.12**		2.05*
L.S.D. (P=.05)			.22	.14	.16	.36		1.8
C.V. (%)			8.4	13.6	9.9	7.1		6.6

Notes: (1) This is an excellent example of variety response to management. Very lenient cutting mgt. was imposed in 1st harvest year-1961. On a fertile site, grass encroachment was (quack and blue) appreciable. This is reflected in the composition estimates for 1st harvest forage in 1962. Grass encroachment is in direct proportion to relative seeding vigor and establishment ability.

(2) Late harvests were all alfalfa and give some reflecting of bacterial wilt coming in on several replicates in 1962. W.R. Flemish vs. DuPuits and alfa is due to this. Wilt not very evident on Narragansett yet in 1962.

F_1 's and BC_1 's of crosses of gaetula x Flemish alfalfas were intermediate in eggs per cluster and eggs per inch of stem when evaluated for alfalfa weevil resistance (Table 24). PI 239953 continued to show resistance. Acc. 61-11 appears to have resistance similar to PI 239953.

Seedling tests for stem nematode resistance of 71 S_1 progenies of Cherokee plants selected as resistant on the basis of seedling tests showed 22 of the 71 to have a high degree of resistance (Table 25). The 22 selected clones are being intercrossed to provide seed of a Cherokee type stem nematode resistant synthetic. The syn. 1 of Syn. N_1 , developed from a backcross program following a cross between a resistant clone from Nevada and selected Flemish type plants, showed resistance equal to Lahontan.

Yields of Cherokee in the fifth harvest year were 33% greater than the average of Atlantic and Williamsburg (Table 26). Persistence of Cherokee was better than Atlantic or Williamsburg. An interesting observation is that Ile-de-France seems to be persisting satisfactorily. In the mountain area of the state Cherokee (entered as M.S.B., Table 27) yielded 116% of the average of Atlantic and Williamsburg. The 3 entries of M.S.B., representing increases of Cherokee in three different cycles of selection, were not significantly different.

Table 24.---Average per cent foliage damage by adults, per cent pith in stem, number of eggs per cluster, and number of eggs per inch of stem for various plant accessions in greenhouse test. Spring, 1961 (A-115).

Entry	% foliage damage	% pith in stem	Eggs per cluster	Eggs per inch of stem
Atlantic	65.9	70.2	11.5	20.7
Acc. 61-11 ^{1/}	35.4	44.9	3.7	5.0
Gaetula				
PI 239953	58.8	57.7	4.7	3.8
PI 230985	93.8	63.6	8.2	14.4
Acc. 58-15	95.0	70.7	2.3	2.3
Flemish ^{2/} x Gaetula				
61-10-1	74.7	62.9	6.8	10.1
61-10-2	66.4	57.1	6.6	13.4
61-10-3	24.3	59.9	10.6	10.6
61-10-4	9.0	50.0	7.4	11.0
F x G ave.	43.6	57.5	7.8	11.3
(Flemish x Gaetula) Flemish				
61-10-5	53.3	56.9	5.8	7.6
61-10-6	63.0	68.9	8.4	10.9
(F x G) F ave.	58.2	62.9	7.1	9.2

^{2/} Refers to parents of "Flamande" type of alfalfa. F₁ and BC₁ seeds of Flemish x gaetula crosses received from Dr. J. L. Fyfe, Cambridge, England.

^{1/} Yellow flowered accession received from C. H. Hanson. Presumably primarily M. falcata in origin.

Table 25.---Seedling reaction to stem nematode of check varieties, a new Flemish type nematode resistant synthetic and S_1 progenies of Cherokee selections.

Entry	No. of seedlings:			% Not swollen
	Swollen	Intermediate	Not swollen	
DuPuits	9	5	12	46
Cherokee	15	3	3	14
Lahontan	1	4	16	80
N_1 (Syn. 1) ^{a/}	1	0	19	95
Cherokee selections (S_1 's) ^{b/}	330	227	327	37
Selected Cherokee selections (S_1 's) ^{c/}	23	49	198	73

^{a/} N_1 (Syn. 1) = Syn. 1 of nematode resistant synthetic put together from BC_2 of cross of resistant Nevada clone with Flemish alfalfas backcrossed to Flemish.

^{b/} Total of S_1 progeny from 71 clones selected from Cherokee on basis of seedling reaction of the clone.

^{c/} Total of S_1 progeny of 22 plants selected from the 71 selected Cherokee plants on the basis of S_1 progeny reaction.

Table 26.---A-67. Alfalfa strain test. Rowan Station. Seeded August 23, 1957.

F. C. No.	Entry	T./A. dry wt.				Stand Depletion- 5/15/62	Total yield 1958-60	
		Cutting dates						
		5-7-62	6-5-62	7-11-62	8-15-62			Total
Wyatts	Atlantic	.72	.60	1.07	.08	2.47	39.2	10.51
F.C. 33557	Buffalo	.26	.21	.44	.03	.94	51.5	9.58
F.C. 33204	Williamsburg	.92	.60	.71	.07	2.30	44.2	10.49
*	N.C. Syn. B(51)7	.81	.57	.93	.08	2.39	26.2	11.23
*	N.C. Syn. B(51)10	.88	.63	.80	.10	2.41	33.8	12.10
*	N.C. Syn. D(51)12	.85	.67	.73	.13	2.38	39.2	11.71
***	N.C. Syn. F(56)1	.56	.64	.72	.04	1.96	59.5	12.31
***	N.C. Syn. F(56)2	.77	.77	1.13	.14	2.81	29.8	11.13
Wyatts	DuPuits	.66	.67	.90	.07	2.30	53.0	11.50
	Indiana Syn. F	.85	.63	1.02	.12	2.62	27.5	9.45
	Indiana Syn. C	1.03	.63	.97	.10	2.73	30.8	10.16
PI 237231	501-Toureur	0.52	.60	.82	.08	2.02	49.2	11.58
PI 188795	Chartainvilliers	.72	.66	.91	.09	2.38	36.5	11.02
PI 188797	Ile-De-France	1.00	.72	1.17	.14	3.03	24.0	10.53
PI 188798	W-268	.37	.26	.48	.03	1.14	71.5	11.23
1957	M.S.A.	1.03	.75	1.03	.09	2.90	31.0	10.83
1957	M.S.B. (Cherokee)	1.10	.79	1.13	.14	3.16	31.8	12.01
L.S.D. (.05)						1.13		
(.01)						N.S.		
CV (%)						33		

¹/ No. of empty 4" squares in 12 square feet.

NORTH CAROLINA - Laurel Springs

Table 27.-Alfalfa variety and synthetic test. Field D 7, Upper Mountain Research Station, Laurel Springs, North Carolina. Seeded 8-3-60.

Entry	T./A. dry wt.			Total	1961 Total	Yellowing ^{1/} 8/2/62	Stand depletion 4/3/62 ^{2/}
	Cutting dates						
	5-21-62	6-25-62	8-2-62				
Atlantic	.82	.72	.55	2.09	2.23	4.2	22.2
Buffalo	.85	.88	.66	2.39	2.60	5.2	9.0
DuPuits	.71	.73	.53	1.97	2.92	6.8	24.5
Maliani	.60	.70	.56	1.86	2.33	7.2	15.2
Narragansett	.74	.71	.58	2.03	2.63	4.8	27.8
Orchies	.71	.76	.63	2.10	2.66	5.2	29.8
Williamsburg	.72	.86	.67	2.25	2.46	5.5	8.2
N.C. Syn. E(58)	.95	.90	.67	2.52	2.58	4.0	9.2
N.C. Syn. F(56)1	.78	.84	.64	2.26	3.02	6.2	11.5
N.C. Syn. G(57)1	.88	.76	.65	2.29	2.92	4.8	10.0
N.C. Syn. G(57)2	.84	.84	.62	2.30	2.71	6.0	12.8
N.C. Syn. G(57)3	.66	.62	.57	1.85	2.51	5.0	30.5
N.C. Syn. G(57)4	.70	.74	.61	2.05	2.60	5.8	13.2
MSA (1957)	.86	.89	.77	2.52	2.58	3.2	9.5
MSA (1959)	.91	.92	.62	2.45	2.57	2.5	12.5
MSB (1955)	.83	.89	.71	2.43	2.62	3.8	12.5
MSB (1957)	.92	.99	.77	2.68	2.80	2.8	9.8
MSB (1959)	.85	.89	.71	2.45	2.83	3.2	3.8
LSD (.05)				.35	N.S.		
LSD (.01)				.47			
CV (%)				11			

^{1/} Score 1-9, 1 = least, 9 = most

^{2/} Number of empty 4 inch squares in 12 square feet

TENNESSEE - Knoxville

Table 28.--1962 Regional Alfalfa Variety Test; Seeded Fall 1960

Variety	Total Yield	1962 Harvest Dates			
		5/11	6/14	7/18	8/22
Tons of air-dry hay per acre					
N.C. Syn. F(56) 1	5.14	2.23	1.04	0.83	1.04
N.C. Syn. G(57) 3	5.11	2.32	0.98	0.81	1.00
Sockeville	5.02	2.29	0.99	0.79	0.95
DuPuits	4.80	2.01	1.02	0.80	0.97
N.C. Syn. G(57) 2	4.66	2.01	0.94	0.79	0.92
Williamsburg	4.60	1.84	0.90	0.82	1.05
N.C. Syn. E(58)	4.46	1.86	0.84	0.74	1.02
Buffalo	4.39	1.65	0.86	0.78	1.10
P.A.G. FD-100	4.32	1.86	0.93	0.72	0.82
Narragansett	4.21	1.78	0.86	0.68	0.90
Ranger	3.95	1.62	0.74	0.73	0.86
Vernal	3.86	1.58	0.80	0.65	0.83
Rhizoma	3.68	1.30	0.83	0.62	0.92
Maliani	3.62	1.20	0.67	0.76	0.98
Lahontan	3.27	1.09	0.59	0.65	0.94
Zia	3.27	1.16	0.62	0.65	0.84
Average	4.27	1.74	0.85	0.74	0.95
L. S. D. (.05)	0.57	....	....	....	....
C. V. %	9.4	....	....	....	....

Design : Randomized complete block, four replications.

Date seeded: Sept. 16, 1960, broadcast seeding at 20 pounds per acre.

Fertilization: 0-120-120 at seeding plus 20 pounds borox per acre;
0-45-135 plus 20 pounds per acre borox on October 10, 1961.

Soil Type : Cumberland loam (2% to 5% slopes).

TENNESSEE - Knoxville

Table 29.--1962 Regional Alfalfa Variety Test; Seeded Fall 1961

Variety	Total Yield	1962 Harvest Dates			
		5/18	6/14	7/18	8/22
Tons of air-dry hay per acre					
Socheville	3.47	1.60	0.58	0.62	0.68
P.A.G. FD-100	3.42	1.38	0.62	0.74	0.68
Ranger	3.28	1.33	0.57	0.68	0.70
N.C. Syn. F(56) 1	3.22	1.31	0.60	0.64	0.67
Orchies	3.10	1.31	0.57	0.62	0.60
Stoneville P. C.1	3.09	1.12	0.53	0.69	0.74
Rhizoma	2.98	1.30	0.57	0.63	0.48
N.C. Syn. G(57) 2	2.94	1.36	0.52	0.53	0.53
N.C. Syn. G(57) 3	2.89	1.32	0.52	0.56	0.49
DuPuits	2.84	1.32	0.54	0.52	0.47
Vernal	2.74	1.26	0.45	0.50	0.53
Williamsburg	2.67	1.11	0.49	0.56	0.50
Narragansett	2.62	1.18	0.48	0.54	0.42
Culver	2.60	1.12	0.40	0.53	0.56
Buffalo	2.02	0.72	0.42	0.44	0.44
Maliani	2.02	0.71	0.42	0.46	0.43
Average	2.87	1.22	0.52	0.58	0.56
L. S. D. (.05)	0.86	....	....	....	....
C. V. %	21.1	....	....	....	....

Design : Randomized complete block, four replications.
 Date Seeded : August 29, 1961, broadcast seeding at 20 pounds per acre.
 Fertilization : 30-120-120 at seeding plus 20 pounds borax per acre.
 Soil Type : Alcoa silt loam (2% to 5% slopes).

WEST VIRGINIA

I. Alfalfa Variety - Fall Management Experiment

The 1961 data indicate large differences occurred in the alfalfa yields among locations and varieties. Furthermore, all the varieties did not respond to fall management in the same way, nor did the varieties rank similarly at all locations.

The growing season at Martinsburg and Point Pleasant permitted an extra cutting for both October managements and at Union for the mid-October management.

Disease has played a major role in limiting yields at Wheeling and Morgantown.

It is interesting to note that 55 percent of the yields of all varieties and managements taken at the eight locations exceeded 5.5 T/A.

II. Persistence of Alfalfa Varieties in 25 County Trials

The data summarizing the differences between varieties in respect to persistence suggest that under West Virginia conditions, Vernal and Narragansett are longer lived than other varieties. On the average, fairly good stands of Vernal and Narragansett were maintained over a 4-year period.

Note: The small letters (a,b,c,d, etc.) following yields in the tables refer to significance of yield differences as measured by the Duncan Multiple Range Test. In table 30, the average yields of Du Puits, Narragansett and Williamsburg are all followed by a and are not significantly different, but these are significantly higher than the yields of the other three varieties. Likewise, Atlantic and Vernal followed by b are significantly lower than Du Puits, Narragansett and Williamsburg (a) and higher than Arizona Common (c). In table 31, (Total Production - Point Pleasant) Williamsburg (a) is not significantly different in yield from Vernal (a,b) but is significantly higher yielding than other varieties. Vernal (ab) is not significantly higher than Arizona Common (b,c,d), Du Puits (b,c) or Narragansett (b) but is higher than Atlantic (c,d) or Buffalo (d). Du Puits (b,c) is significantly higher in yield than Buffalo (d).

WEST VIRGINIA

Table 30.--Alfalfa variety - Management - Summary

Average Field Cured Yields (15% Moisture) in Tons/Acre for the Alfalfa Variety Management Trial from Eight Locations in 1961.

Time of Fall Cutting	Arizona Common	Atlantic	Du Puits	Narragansett	Vernal	Williamsburg	Average
TOTAL PRODUCTION							
Early Sept.	5.15	5.38	5.80	5.70	5.49	5.79	5.55a
Mid. Sept.	5.33	5.72	5.93	5.75	5.74	6.00	5.74a
Early Oct.	5.29	5.65	5.87	5.89	5.73	5.82	5.71a
Mid. Oct.	5.01	5.86	5.85	5.92	5.80	5.97	5.74a
Average	5.19c	5.65b	5.86a	5.81a	5.69b	5.90a	
ALFALFA FRACTION							
Early Sept.	4.18	4.60	5.22	5.22	4.90	5.31	4.91a
Mid., Sept.	4.40	4.92	5.25	5.18	5.01	5.38	5.02a
Early Oct.	4.32	5.00	5.24	5.38	5.15	5.30	5.06a
Mid. Oct.	3.73	5.20	5.27	5.43	5.09	5.43	5.02a
Average	4.16c	4.93b	5.25a	5.30a	5.04b	5.35a	

WEST VIRGINIA - Point Pleasant and Union

Table 21. Alfalfa variety - Point Pleasant and Union

Average Field Cured Yields (15% Moisture) in Tons/Acre for the Alfalfa Variety Management at Point Pleasant and Union, 1961.

Time of Fall Cutting	Arizona Common	Atlantic	Du Puits	Narragansett	Vernal	Williamsburg	Buffalo	Average
TOTAL PRODUCTION - POINT PLEASANT								
Early Sept.	7.06	6.96	7.35	6.84	7.16	7.36	6.07	6.97a
Mid. Sept.	6.97	6.99	7.27	7.26	7.44	7.67	7.53	7.30a
Early Oct.	6.88	6.80	6.95	7.14	7.01	7.38	6.36	6.93a
Mid. Oct.	6.68	6.36	6.34	6.94	7.01	7.28	6.47	6.72a
Average	6.90bcd	6.78cd	6.97bc	7.04b	7.15ab	7.42a	6.61d	
ALFALFA FRACTION - POINT PLEASANT								
Early Sept.	5.78	5.84	6.08	5.87	6.16	6.47	4.99	5.88a
Mid. Sept.	5.77	5.92	6.24	6.31	6.40	6.61	5.81	6.15a
Early Oct.	6.75	6.68	6.71	7.00	6.86	7.30	6.15	6.78a
Mid. Oct.	6.50	6.19	6.10	6.82	6.91	7.19	6.31	6.57a
Average	6.20bc	6.16cd	6.28bc	6.50bc	6.58ab	6.89a	5.81d	
TOTAL PRODUCTION - UNION								
Early Sept.	5.23	5.63	5.94	5.97	6.08	5.87		5.78a
Mid. Sept.	5.63	5.45	6.20	6.09	5.68	6.01		5.84a
Early Oct.	4.53	5.14	4.91	5.12	5.38	4.84		4.98a
Mid. Oct.	4.12	6.21	5.98	6.33	6.16	6.34		5.85a
Average	4.87b	5.60a	5.76a	5.87a	5.82a	5.76a		
ALFALFA FRACTION - UNION								
Early Sept.	5.02	5.55	5.83	5.87	5.95	5.72		5.65a
Mid. Sept.	5.21	5.25	6.06	5.99	5.57	5.87		5.66a
Early Oct.	2.90	5.03	4.47	4.86	5.21	4.60		4.51a
Mid. Oct.	2.58	6.14	5.95	6.26	6.09	6.28		5.55
Average	3.93b	5.49a	5.58a	5.74a	5.70a	5.61a		

WEST VIRGINIA - Martinsburg and Wardensville

Table 32.--Alfalfa variety - Martinsburg and Wardensville

Average Field Cured Yields (15% Moisture) in Tons/Acre for the Alfalfa Variety Management Trial at Martinsburg and at Wardensville in 1961.

Time of Fall Cutting	Arizona Common	Atlantic	Du Puits	Narragansett	Vernal	Williamsburg	Average
TOTAL PRODUCTION - MARTINSBURG							
Early Sept.	6.05	7.07	7.69	6.79	6.80	7.02	6.90b
Mid. Sept.	5.75	6.36	6.82	6.42	6.32	6.40	6.34c
Early Oct.	7.01	7.79	7.77	7.54	7.56	6.83	7.41a
Mid. Oct.	6.46	7.66	7.59	7.28	7.22	7.40	7.27a
Average	6.31c	7.22ab	7.47a	7.01ab	6.97ab	6.91b	
ALFALFA FRACTION - MARTINSBURG							
Early Sept.	5.98	6.87	7.65	6.77	6.71	6.98	6.82b
Mid. Sept.	5.64	6.32	6.76	6.37	6.23	6.34	6.28c
Early Oct.	6.87	7.73	7.76	7.52	7.51	6.81	7.36a
Mid. Oct.	6.37	7.61	7.58	7.25	7.20	7.39	7.23ab
Average	6.21b	7.13a	7.44a	6.98a	6.91a	6.88a	
TOTAL PRODUCTION - WARDENSVILLE							
Early Sept.	4.06	3.97	4.87	4.99	4.50	5.22	4.60b
Mid. Sept.	5.37	4.76	5.46	5.03	5.26	5.55	5.24a
Early Oct.	4.46	4.63	5.33	5.40	5.19	6.20	5.20a
Mid. Oct.	4.01	4.94	5.06	5.31	4.71	5.03	4.84b
Average	4.47d	4.57cd	5.18ab	5.18ab	4.91bc	5.50a	
ALFALFA FRACTION - WARDENSVILLE							
Early Sept.	3.59	3.70	4.65	4.72	4.23	5.06	4.32b
Mid. Sept.	5.07	4.51	5.29	4.94	5.13	5.47	5.07a
Early Oct.	4.30	4.51	5.19	5.31	5.07	6.06	5.07a
Mid. Oct.	3.06	4.73	4.95	5.18	4.52	4.94	4.56ab
Average	4.00d	4.36cd	5.02ab	5.04ab	4.74bc	5.38 a	

WEST VIRGINIA - Morgantown and Wheeling

Table 33.--Alfalfa variety - Morgantown and Wheeling

Average Field Cured Yields (15% Moisture) in Tons/Acre for the Alfalfa Variety Management Trial at Morgantown and at Wheeling in 1961.

Time of Fall Cutting	Arizona Common	Atlantic	Du Puits	Narragansett	Vernal	Williamsburg	Average
TOTAL PRODUCTION - MORGANTOWN							
Early Sept.	4.89	4.97	6.03	5.87	5.20	5.43	5.40a
Mid. Sept.	5.45	5.96	6.63	5.92	5.89	6.25	6.01a
Early Oct.	4.75	5.49	6.12	5.98	5.79	5.44	5.59a
Mid. Oct.	4.79	5.82	6.04	6.03	5.87	5.64	5.70a
Average	4.97c	5.56b	6.20a	5.96ab	5.69b	5.69b	
ALFALFA FRACTION - MORGANTOWN							
Early Sept.	4.17	3.88	5.49	5.54	4.53	5.11	4.78a
Mid. Sept.	4.82	5.28	5.84	5.29	4.98	5.62	5.30a
Early Oct.	4.06	4.72	5.44	5.24	4.71	4.90	4.84a
Mid. Oct.	3.50	4.64	4.75	4.98	4.51	4.51	4.48a
Average	4.13c	4.63b	5.33a	5.26a	4.68b	5.03ab	
TOTAL PRODUCTION - WHEELING							
Early Sept.	4.16	3.82	4.20	4.09	3.97	3.78	4.00a
Mid. Sept.	4.06	5.02	4.15	4.21	4.30	4.30	4.34a
Early Oct.	4.30	4.09	4.19	4.27	4.24	4.24	4.22a
Mid. Oct.	3.99	4.25	4.21	4.21	4.03	4.51	4.20a
Average	4.13a	4.29a	4.18a	4.19a	4.13a	4.21a	
ALFALFA FRACTION - WHEELING							
Early Sept.	4.06	3.74	4.05	3.98	3.91	3.72	3.91a
Mid. Sept.	3.87	4.80	3.76	3.99	4.11	4.14	4.11a
Early Oct.	3.99	3.84	3.89	4.10	3.78	4.11	3.95a
Mid. Oct.	3.31	3.76	3.83	3.76	3.30	3.85	3.63a
Average	3.80a	4.03a	3.83a	3.96a	3.77a	3.95a	

WEST VIRGINIA - Reedsville and Terra Alta

Table 34.--Alfalfa variety - Reedsville and Terra Alta

Average Field Cured Yields (15% Moisture) in Tons/Acre for the Alfalfa Variety Management Trial at Reedsville and at Terra Alta in 1961.

Time of Fall Cutting	Arizona Common	Atlantic	Du Puits	Narragansett	Vernal	Williamsburg	Average
TOTAL PRODUCTION - REEDSVILLE							
Early Sept.	5.70	6.42	5.63	6.19	6.03	6.81	6.13a
Mid. Sept.	5.81	6.27	6.57	6.92	6.47	6.60	6.44a
Early Oct.	6.20	6.53	7.07	6.71	6.15	6.72	6.56a
Mid. Oct.	5.43	6.57	6.94	6.41	6.77	6.39	6.42a
Average	5.78b	6.45a	6.55a	6.56a	6.35a	6.63a	
ALFALFA FRACTION - REEDSVILLE							
Early Sept.	2.52	4.38	4.39	5.02	4.46	5.34	4.35a
Mid. Sept.	2.95	4.39	4.78	5.26	4.62	4.52	4.42a
Early Oct.	3.93	4.34	5.01	4.70	4.63	4.81	4.57a
Mid. Oct.	2.62	4.36	5.22	5.05	4.34	4.76	4.39a
Average	3.00c	4.37b	4.85ab	5.00a	4.51ab	4.85ab	
TOTAL PRODUCTION - TERRA ALTA							
Early Sept.	4.03	4.19	4.70	4.86	4.22	4.84	4.47a
Mid. Sept.	3.61	5.00	4.36	4.15	4.56	5.20	4.48a
Early Oct.	4.19	4.78	4.65	4.97	4.56	4.95	4.68a
Mid. Oct.	4.66	5.12	4.67	4.85	4.64	5.20	4.85a
Average	4.12c	4.77ab	4.59b	4.71b	4.50b	5.04a	
ALFALFA FRACTION - TERRA ALTA							
Early Sept.	2.33	2.86	3.65	4.05	3.30	4.11	3.38a
Mid. Sept.	1.89	2.93	3.30	3.33	3.06	4.45	3.16a
Early Oct.	1.81	3.13	3.47	4.33	3.47	3.80	3.33a
Mid. Oct.	1.88	4.16	3.81	4.16	3.89	4.55	3.74a
Average	1.98c	3.27b	3.56b	3.97a	3.43b	4.23a	

Table 35.---Persistence of Alfalfa Varieties
(Based on 25 County Trials)

Rank (1 Best, 6 Worst)		% Stand	
Vernal	2.20	Vernal	61.6
Narragansett	2.48	Narragansett	57.5
Atlantic	3.28	Atlantic	54.4
Williamsburg	3.62	Williamsburg	49.3
DuPuits	4.00	DuPuits	42.9
Farmer's Choice Av.	4.60	Farmer's Choice Av.	36.1
a. Grimm	4.00	a. Grimm	43.2
b. Kan. Com.	4.83	b. Kan. Com.	39.2
c. Buffalo	5.25	c. Buffalo	22.2
Relative Positions In Rankings*			
1 & 2		3 & 4	
5 & 6		5 & 6	
Vernal	16	8	1
Narragansett	12	10	1
Atlantic	8	12	5
Williamsburg	6	7	8
DuPuits	4	10	9
Farmer's Choice Total	4	4	14
a. Grimm	3	3	6
b. Kan. Com.	1	0	5
c. Buffalo	0	1	3

* As reported by County Agricultural Agents.

Table 36.---NE-28 Alfalfa Varieties and Synthetics - 1958

Location: Storrs, Conn. 1962 Data

Number	Entry	Total Yield T/A (12% M)		Season Yield	% Alfalfa 6/18 7/31
		1st cut 6/18	2nd cut 7/31		
36	Indiana Syn. F	---	---	---	---
37	N.Y. A	2.38	1.55	3.93	67 50
38	N.Y. B	2.28	1.32	3.60	46 45
39	N.Y. C	---	---	---	---
40	Syn. A-242	---	---	---	---
41	Buffalo	2.13	.86	3.00	18 18
42	Williamsburg	1.83	.64	2.47	13 17
43	Lahontin	2.03	.66	2.70	13 13
44	Ranger	2.18	.99	3.17	25 26
45	Atlantic	2.07	1.05	3.12	25 33
46	DuPuits	1.26	.35	1.61	2 2
47	Narragansett	1.64	.61	2.25	11 14
48	Vernal	2.38	1.25	3.62	46 33
49	Rambler	---	---	---	---
50	NK-501	1.41	.32	1.74	2 4
51	Alfa	.88	.22	1.09	Tr. 2
52	Moapa	1.92	.47	2.39	2 2
	Average	1.88	.79	2.67	
	F - Varieties	11.16*	37.02**	23.70**	
	L.S.D. (P=.05)	.39	.19	.49	
	C.V. %	16.4	19.4	14.6	

Notes: (1) Stands of wilt-susceptable varieties were substantially reduced in 3rd year of production. 1962--the 4th year saw continued reduction in all entries with New York synthetics very superior in persistence.

Table 37.--NE -28 Alfalfa Varieties and Synthetics - 1960
Location: Storrs, Conn. 1962 Data

Mgt. 3 cut, severe Random Number	Entry	N.Y. No.	Total Yield - T/A (12%M)				% Alfalfa		% D.M.
			1st cut 6/6	2nd cut 7/16	3rd cut 8/29	Season Total	6/1	8/27	
1	N.Y. Syn. A	60-13	2.24	1.06	.82	4.12	66	72	19.3
2	N.Y. Syn. B	60-19	2.27	1.03	.70	4.00	55	66	18.1
3	H.S. Narrag.	60-20	2.27	1.05	.80	4.11	65	72	19.6
4	W.R. Narrag.	60-21	2.36	1.04	.76	4.16	72	71	19.6
5	W.R. Flemish	60-22	2.37	1.12	.74	4.22	68	76	19.6
6	Atlantic	60-27	2.12	.94	.67	3.72	59	68	19.5
7	Narrag.	60-14	2.48	1.04	.81	4.33	71	73	20.4
8	Vernal	60-26	2.03	.93	.70	3.65	50	59	19.6
9	DuPuits	60-17	2.24	.94	.75	3.93	51	45	20.5
Average									
F - Varieties			2.26	1.02	.75	4.03			19.6
L.S.D. (P=.05)			3.34**	1.77-	.53-	3.46**			2.71*
C.V. (%)			.20	.14	.21	.34			1.2
			7.9	11.8	24.0	7.3			5.2
Mgt. 3 cut, moderate Number	Entry	N.Y. No.	1st cut 6/14	2nd cut 7/26	3rd cut 9/7	Season Total	% Alfalfa		% D.M.
							6/1	8/27	
1	N.Y. Syn. A	60-18	2.23	1.26	.88	4.37	70	66	19.5
2	N.Y. Syn. B	60-19	2.08	1.16	.82	4.07	61	56	19.4
3	H.S. Narrag.	60-20	2.35	1.38	.90	4.63	73	66	19.0
4	W.R. Narrag.	60-21	2.17	1.35	.86	4.38	72	67	19.8
5	W.R. Flemish	60-22	2.24	1.45	.94	4.64	74	70	19.4
6	Atlantic	60-27	2.01	1.21	.92	4.15	58	52	20.1
7	Narrag.	60-14	2.25	1.42	.93	4.60	76	66	20.1
8	Vernal	60-26	1.98	1.15	.75	3.89	61	54	19.5
9	DuPuits	60-17	2.02	1.04	.63	3.69	76	57	19.8
Average									
F - Varieties			2.15	1.27	.85	4.27			19.6
L.S.D. (P=.05)			3.01**	2.86*	2.07-	3.71**			46-
C.V. (%)			.41	.23	.20	.50			1.5
			8.5	16.0	20.5	10.2			6.6

Notes: (1) Second harvest year results reflect initial stand differences as well as the effects of bacterial wilt. Cayuga and Vernal had poorer initial establishment than the rest. Wilt was observed on DuPuits late in the season.

(2) As seen in the composition estimates, wilt resistance in the Flemish material had effect here in the second year. No wilt effects are yet apparent in the Narragansett lots.

Table 38.---NE-28 Alfalfa Varieties and Synthetics Test 1960
Location: College Park, Md.

Mgt. 4 cut, severe Random Number	Entry	N.Y. No.	Total Yield = T/A (12%)					% D.M. 5/19
			1st cut 5/18	2nd cut 6/25	3rd cut 7/28	4th cut 9/1	Season Total	
1	N.Y. Syn. A	60-18	1.82	1.43	1.15	.04	4.43	21.2
2	N.Y. Syn. B	60-19	1.94	1.41	1.26	.08	4.69	22.8
3	H.S. Narrag.	60-20	1.70	1.42	1.11	.07	4.30	20.6
4	W.R. Narrag.	60-21	1.77	1.43	1.15	.03	4.39	21.7
5	W.R. Flemish	60-22	1.92	1.45	1.22	.06	4.65	22.6
6	Atlantic	60-27	1.90	1.44	1.22	.06	4.62	21.5
7	Narrag.	60-14	1.76	1.49	1.16	.07	4.49	21.3
8	Vernal	60-26	1.73	1.22	.96	.05	3.96	22.5
9	DuPuits	60-17	1.79	1.59	1.23	.07	4.68	22.1
Average								
F = Varieties								
L.S.D. (P=.05)								
C.V. (%)								
1	N.Y. Syn. A	60-18	1.81	1.43	1.16	.06	4.47	21.8
2	N.Y. Syn. B	60-19	1.78	3.13**	1.90	1.53	2.42*	1.85-
3	H.S. Narrag.	60-20	.18	.16	.18	.03	.42	.15-
4	W.R. Narrag.	60-21	8.8	9.4	13.7	47.7	8.4	6.0

Mgt. 3 cut, moderate Random Number	Entry	N.Y. No.	Total Yield = T/A (12%)					% D.M. 6/4
			1st cut 5/24	2nd cut 7/13	3rd cut 9/1	4th cut Total	Season Total	
1	N.Y. Syn. A	60-18	2.50	1.67	.04	4.21	24.5	24.5
2	N.Y. Syn. B	60-19	2.46	1.68	.03	4.16	25.0	25.0
3	H.S. Narrag.	60-20	2.60	1.48	.03	4.11	24.2	24.2
4	W.R. Narrag.	60-21	2.53	1.44	.03	4.00	24.7	24.7
5	W.R. Flemish	60-22	2.62	1.71	.04	4.37	24.5	24.5
6	Atlantic	60-27	2.70	1.55	.04	4.29	24.9	24.9
7	Narrag.	60-14	2.55	1.50	.04	4.09	24.2	24.2
8	Vernal	60-26	2.39	1.45	.03	3.87	24.7	24.7
9	DuPuits	60-17	2.52	1.63	.03	4.18	24.4	24.4
Average								
F = Varieties								
L.S.D. (P=.05)								
C.V. (%)								
1	N.Y. Syn. A	60-18	2.54	1.56	.03	4.14	24.5	24.5
2	N.Y. Syn. B	60-19	1.46-	1.57-	-	1.20-	1.32-	1.32-
3	H.S. Narrag.	60-20	.21	.24	-	.38	.4	.4
4	W.R. Narrag.	60-21	7.3	13.2	-	8.0	4.9	4.9

Notes: Severe mid and late summer drought conditions. Fall recovery growth was excellent.

Table 39.--NE-28 Alfalfa Varieties and Synthetics - 1958
Location: Ithaca (McGowan) 1962 Data

Random Number	Entry	Total Yield - T/A - 12% Moisture				Season Total	Ave. D.M. % 6/6
		1st cut 6/6	2nd cut 7/19	3rd cut 8/31			
36	Indiana Syn. F	-	-	-	-	-	-
37	New York A	1.68	.89	1.12	3.69	27.0	27.0
38	New York B	1.44	.76	1.03	3.24	28.6	28.6
39	New York C	-	-	-	-	-	-
40	Syn. A-242	-	-	-	-	-	-
41	Buffalo	1.25	.64	.84	2.73	27.2	27.2
42	Williamsburg	1.16	.54	.70	2.40	28.3	28.3
43	Lahontin	1.18	.60	.81	2.60	28.2	28.2
44	Ranger	1.23	.60	.81	2.64	28.3	28.3
45	Atlantic	1.29	.59	.88	2.76	28.4	28.4
46	DuPuits	.66	.11	.08	.84	30.4	30.4
47	Narragansett	1.10	.32	.42	1.84	29.4	29.4
48	Vernal	1.51	.80	.96	3.26	28.3	28.3
49	Rambler	-	-	-	-	-	-
50	NK-501	1.13	.18	.20	1.51	29.7	29.7
51	Alfa	.57	.07	.08	.72	29.7	29.7
52	Moapa	.67	.09	.10	.85	32.0	32.0
	Average	1.14	.48	.62	2.24	28.9	28.9
	F - Varieties	7.00**	17.40**	36.53**	19.50**	3.32**	3.32**
	L.S.D. (P = .05)	.36	.19	.18	.62	2.0	2.0
	C.V. %	24.7	32.5	23.2	22.4	5.6	5.6
	Ave. D.M. %	28.9	31.6	23.4			

Notes: Relative bacterial wilt susceptibility of the entries is reflected in 1962 yields.

Table 40. --NE-28 Alfalfa Variety and Synthetics Trial - 1960
Location: Smyrna, N.Y. 1962 Data

One Management Only: 2 cuts/season			Total Yield - Tons/Acre (12% M)			Composition		% D.M.
Random	Entry	N.Y.	1st cut	2nd cut	Season	% Legume		
Number		No.	6/	8/29	Total	6/	6/	
1	N.Y. Syn. A	60-18	2.66	.96	3.62	76		33.5
2	N.Y. Syn. B	60-19	2.63	1.03	3.66	73		33.5
3	H.S. Narrag.	60-20	2.77	1.17	3.94	78		32.5
4	W.R. Narrag.	60-21	2.65	1.09	3.74	79		33.2
5	W.R. Flemish	60-22	2.84	1.15	3.99	83		33.0
6	Atlantic	60-27	2.61	1.09	3.71	78		32.8
7	Narrag.	60-14	2.82	1.10	3.93	78		33.9
8	Vernal	60-26	2.70	1.07	3.77	76		33.2
9	DuPuits	60-17	2.71	1.17	3.88	86		33.7
	Ave.		2.71	1.09	3.80			33.3
	F-Varieties		1.95*	3.99**	2.90**			1.05
	L.S.D. (P=.05)		.19	.10	.22			1.2
	C.V. (%)		7.6	10.9	7.1			4.5

Table 41.--NE-28 Alfalfa Variety and Synthetics Trial - 1960
Location: Aurora, New York

Management - Moderate

Random Number	Entry	N.Y. No.	Total Yield - Tons/acre (12%M)				% D.M. 6/18
			1st cut 6/18	2nd cut 7/27	3rd cut 9/18	Season Total	
1	N.Y. Syn. A	60-18	1.49	.10	.50	2.10	32.3
2	N.Y. Syn. B	60-19	1.47	.10	.54	2.11	31.7
3	H.S. Narrag.	60-20	1.43	.08	.50	2.01	31.3
4	W.R. Narrag.	60-21	1.58	.09	.51	2.18	32.7
5	W.R. Flemish	60-22	1.06	.17	.50	1.74	32.3
6	Atlantic	60-27	1.66	.13	.59	2.39	32.0
7	Narrag.	60-14	1.40	.08	.48	1.96	30.7
8	Vernal	60-26	1.24	.07	.42	1.73	30.8
9	Du Puit	60-17	1.31	.18	.55	2.03	32.2
	Ave.		1.40	.11	.51	2.02	31.8
	F-Varieties		3.33**	2.31**	1.18	2.63*	21.7 -
	L.S.D. (P=.05)		.28	.07	.12	.36	1.4
	C.V. (%)		17.5	56.0	21.3	15.5	3.7

Management - Severe

Random Number	Entry	N.Y. No.	Total Yield - Tons/acre (12%M)				% D.M. 7/31
			1st cut 5/31	2nd cut 7/6	3rd cut 9/10	Season Total	
1	N.Y. Syn. A	60-18	1.17	.27	.44	1.88	26.1
2	N.Y. Syn. B	60-19	.89	.18	.36	1.43	26.3
3	H.S. Narrag.	60-20	1.11	.26	.37	1.74	25.8
4	W.R. Narrag.	60-21	1.06	.26	.43	1.75	27.0
5	W.R. Flemish	60-22	1.07	.27	.49	1.83	26.3
6	Atlantic	60-27	.92	.22	.33	1.47	26.0
7	Narrag.	60-14	1.25	.28	.45	1.97	26.4
8	Vernal	60-26	.95	.19	.31	1.45	27.1
9	Du Puits	60-17	1.10	.37	.48	1.94	25.7
	Ave.		1.06	.26	.41	1.72	26.3
	F-Varieties		2.17 -	1.70 -	2.77*	2.41*	1.39 -
	L.S.D. (P=.05)		.22	.12	.11	.40	1.1
	C.V. (%)		18.5	41.2	23.5	19.7	3.7

Table 42.--NE-28 Alfalfa Varieties and Synthetics Test-1960
Location: Westtown, N.Y. (Orange Co.) 1962 Data

Random Number	Entry	Mgt.: 3 cut, severe N.Y. No.	Total Yield - T/A - (12 % Moisture)				Aver. % stand 5/25
			1st cut 5/25	2nd cut 7/10	3rd cut 9/12	Season Total	
1	N.Y. Syn. A	60-18	1.20	.37	1.07	2.64	42
2	N.Y. Syn. B	60-19	1.25	.35	.98	2.58	42
3	H.S. Narrag.	60-20	1.07	.31	.92	2.29	32
4	W.R. Narrag.	60-21	1.14	.34	.90	2.38	34
5	W.R. Flemish	60-22	1.23	.41	1.14	2.78	47
6	Atlantic	60-27	1.13	.33	.96	2.41	37
7	Narrag.	60-14	1.11	.39	1.03	2.53	38
8	Vernal	60-26	1.24	.31	.88	2.43	42
9	DuPuits	60-17	1.06	.23	.64	1.93	21
	Aver.		1.16	.34	.95	2.44	
	F-Varieties		1.85	1.86	2.65 *	2.93 *	
	L.S.D. (P = .05)		.23	.11	.24	.37	
	C.V. (%)		17.1	28.0	22.5	14.1	
	Mgt.: 3 cut, Normal						
			1st cut 6/15	2nd cut 7/25	3rd cut 9/12	Season Total	
1	N.Y. Syn. A		1.62	.48	.99	3.03	70 DM
2	N.Y. Syn. B		1.98	.65	1.11	3.73	6/15
3	H.S. Narrag.		1.83	.46	1.00	3.29	29.4
4	W.R. Narrag.		1.82	.51	.98	3.31	28.5
5	W.R. Flemish		1.66	.71	1.22	3.50	28.7
6	Atlantic		1.76	.50	.98	3.23	29.2
7	Narrag.		1.78	.62	1.07	3.47	27.7
8	Vernal		1.62	.59	1.04	3.26	28.5
9	DuPuits		1.45	.41	.67	2.53	30.5
	Aver.		1.72	.55	.99	3.26	28.8
	F-Varieties		2.66 *	4.42 **	6.00 **	5.89 **	29.5 *
	L.S.D. (P = .05)		.27	.13	.17	.39	1.3
	C.V. (%)		13.3	21.5	14.6	10.6	4.1

Notes:

1. 1st year of severe treatment greatly reduced stands. Severe leaf-hopper injury was a factor. Alfalfa fraction was about the same as stand estimate.
2. Very severe drought in this area in 1962 and bacterial wilt showed strongly in only the second year--particularly on DuPuits.
3. By 3rd cut, Cayuga looked very well here--on moderate treatment.

Table 43.---NE-28 Alfalfa Varieties and Synthetics Test-1960
Location: Ithaca, N.Y. - Pulleyn 1962 Data

Mgt. : 3 cut, severe		Total Yield - T/A - 12% Moisture					Ave. % D.M.
		1st cut 5/24	2nd cut 7/5	3rd cut 9/7	Season Total	5/24	
Random Number	N.Y. No.						
1	N.Y. Syn. A 60-18	1.41	.65	.98	3.04	21.0	
2	N.Y. Syn. B 60-19	1.27	.51	.89	2.67	21.8	
3	I.S. Narrag. 60-20	1.41	.59	.90	2.90	21.3	
4	W.R. Narrag. 60-21	1.43	.70	.99	3.13	21.1	
5	W.R. Flemish 60-22	1.43	.73	.97	3.13	21.8	
6	Atlantic 60-27	1.31	.60	.96	2.87	21.3	
7	Narrag. 60-14	1.45	.71	.94	3.10	21.8	
8	Vernal 60-26	1.29	.51	.85	2.66	21.3	
9	DuPuits 60-17	1.32	.68	.92	2.92	22.2	
Ave.		1.37	.63	.93	2.93	21.5	
F-Varieties		1.91	2.28*	.65	1.77	141	
L.S.D. (P = .05)		.05	.15	.17	.38	1.7	
C.V. (%)		9.1	21.1	15.5	11.4	7.1	
Mgt. : 3 cut, normal		Total Yield - T/A - 12% Moisture					Ave. % D.M.
		1st cut 6/11	2nd cut 7/25	3rd cut 9/19	Season Total	6/11	
1	N.Y. Syn. A	1.22	.29	.97	2.49	27.7	
2	N.Y. Syn. B	1.34	.33	.99	2.66	26.3	
3	H.S. Narrag.	1.40	.45	1.17	3.02	27.4	
4	W.R. Narrag.	1.49	.51	1.20	3.20	26.2	
5	W.R. Flemish	1.53	.38	1.09	3.00	27.6	
6	Atlantic	1.18	.34	1.02	2.54	26.8	
7	Narrag.	1.39	.39	1.03	2.81	26.5	
8	Vernal	1.32	.37	.97	2.65	27.4	
9	DuPuits	1.39	.49	1.03	2.91	27.4	
Ave.		1.36	.39	1.05	2.81	27.0	.98
F-Varieties		2.44*	2.88**	1.75	2.64*	1.7	
L.S.D. (P = .05)		.21	.57	.47	1.32	5.4	
C.V. (%)		13.1	57.1	47.1	13.2		

Notes: This site is gravelly and dry in a normal season--the extreme growth conditions of 1962 made it even worse. Not too much opportunity for superior variety expression. Earlier harvest conserved most moisture this season.

Table 44.--NE-28 Alfalfa Variety and Synthetics Test - 1960
Location: University Park, Pa.

Mgt. 3 cut - Severe		Total Yield - Tons/Acre (12%)				% D.M.
Random Number	Entry	N.Y. No.	1st cut	2nd cut 7/13	Season Total	
1	N.Y. Syn. A	60-18	1.53	.47	2.00	29.1
2	N.Y. Syn. B	60-19	1.52	.63	2.15	27.6
3	H.S. Narrag.	60-20	1.68	.62	2.30	27.2
4	W.R. Narrag.	60-21	1.63	.58	2.21	29.6
5	W.R. Flemish	60-22	1.64	.68	2.32	29.6
6	Atlantic	60-27	1.54	.60	2.14	29.4
7	Narrag.	60-14	1.53	.54	2.07	28.9
8	Vernal	60-26	1.51	.48	1.99	28.7
9	DuPuits	60-17	1.61	.68	2.29	29.4
Ave.			1.57	.59	2.16	28.8
F - Varieties			1.05-	5.14**	2.11-	4.51**
L.S.D. (P=.05)			.17	.10	.25	1.1
C.V. (%)			9.7	14.2	7.9	3.4
Mgt. 3 cut - Moderate		Total Yield - Tons/Acre (12%)				% D.M.
Random Number	Entry	N.Y. No.	1st cut 6/	2nd cut 7/	Season Total	
1	N.Y. Syn. A		1.45	.65	2.11	29.6
2	N.Y. Syn. B		1.58	.67	2.25	30.7
3	H.S. Narrag.		1.50	.67	2.17	28.6
4	W.R. Narrag.		1.56	.72	2.27	29.8
5	W.R. Flemish		1.73	.80	2.54	30.6
6	Atlantic		1.55	.70	2.26	29.9
7	Narrag.		1.63	.72	2.35	29.5
8	Vernal		1.63	.64	2.27	31.7
9	DuPuits		1.53	.68	2.21	31.7
Ave.			1.57	.70	2.27	30.2
F - Varieties			2.36*	1.23-	1.96-	1.23-
L.S.D. (P=.05)			.15	.26	.24	2.6
C.V. (%)			8.3	7.5	9.3	7.5

Notes: (1) Extreme drouth conditions; only 2 cuts possible.

Table 45.--NE-28 Alfalfa Variety and Synthetics Trial - 1960

Location: Morgantown, West Va.

1962 Data

Mgt.: Moderate		Total Yield - Tons/Acre (12% M)				
Random	Entry	N.Y. No.	1st cut 5/25	2nd cut 7/5	3rd cut 8/20	Season Total
1	N.Y. Syn. A	60-18	1.70	.74	.58	3.02
2	N.Y. Syn. B	60-19	1.72	.77	.64	3.13
3	H.S. Narrag.	60-20	1.71	.83	.67	3.21
4	W.R. Narrag.	60-21	1.71	.74	.61	3.06
5	W.R. Flemish	60-22	1.87	.97	.69	3.53
6	Atlantic	60-27	1.67	.69	.58	2.94
7	Narrag.	60-14	1.87	.91	.69	3.47
8	Vernal	60-26	1.56	.65	.61	2.82
9	DuPuits	60-17	1.76	.83	.55	3.14
	Average		1.73	.79	.61	3.14
	F - Varieties		1.54 -	4.06**	3.08**	5.35**
	L.S.D. (P=.05)		.12	.14	.08	.28
	C.V. (%)		11.0	15.9	11.4	7.8
Mgt.: Severe		Total Yield - Tons/Acre (12% M)				
Random	Entry	N.Y. No.	1st cut 5/18	2nd cut 6/25	3rd cut 8/5	Season Total
1	N.Y. Syn. A	60-18	1.17	.91	.48	2.96
2	N.Y. Syn. B	60-19	1.09	.90	.45	2.82
3	H.S. Narrag.	60-20	1.06	.90	.53	2.88
4	W.R. Narrag.	60-21	1.09	.90	.49	2.86
5	W.R. Flemish	60-22	1.18	.93	.47	2.97
6	Atlantic	60-27	1.08	.82	.44	2.74
7	Narrag.	60-14	1.13	1.00	.46	2.96
8	Vernal	60-26	.91	.70	.45	2.41
9	DuPuits	60-17	1.03	.95	.47	2.83
	Average		1.08	.89	.46	2.82
	F - Varieties		2.78*	2.11 -	.67 -	2.67*
	L.S.D. (P=.05)		.14	.19	.10	.31
	C.V. (%)		10.8	16.3	17.5	9.3

Table 46.--1962 Summary NE-28 Alfalfa Variety and Synthetics Trials - 1960

Moderate Mgt. Systems		Total Season Yields - Tons/Acre (12%W)										
Random Number	Entry	N.Y. No.	Location: No. Cuts:	N.Y. Chenango (2)	N.Y. Aurora (3)	N.Y. Orange (3)	N.Y. Ithaca (3)	Pa. (2)	Conn. (3)	Maryland (3)	W. Va. (3)	Regional Average
1	N.Y. Syn. A.	60-18		3.62	2.10	3.03	2.49	2.11	4.37	4.21	3.02	3.12
2	N.Y. Syn. B	60-19		3.66	2.11	3.73	2.66	2.25	4.07	4.16	3.13	3.22
3	H.S. Narrag.	60-20		3.94	2.01	3.29	3.02	2.17	4.63	4.11	3.21	3.30
4	W.R. Narrag.	60-21		3.74	2.18	3.31	3.20	2.27	4.38	4.00	3.06	3.27
5	W.R. Flemish	60-22		3.99	1.74	3.60	3.00	2.54	4.64	4.37	3.53	3.43
6	Atlantic	60-27		3.71	2.39	3.23	2.54	2.26	4.15	4.29	2.94	3.19
7	Narrag.	60-14		3.93	1.96	3.47	2.81	2.35	4.60	4.09	3.47	3.33
8	Vernal	60-26		3.77	1.73	3.26	2.65	2.27	3.89	3.87	2.82	3.03
9	DuPuits	60-17		3.88	2.03	2.53	2.91	2.21	3.69	4.18	3.14	3.07
	Average			3.80	2.02	3.26	2.81	2.27	4.27	4.14	3.14	3.21
	F - Varieties			2.90**	2.63*	5.89**	2.64*	1.96-	3.71**	1.20-	5.35**	
	L.S.D. (P=.05)			.22	.36	.39	.42	.24	.50	.38	.28	
	C.V. (%)			7.1	15.5	10.6	13.0	9.3	10.2	8.0	7.8	

Notes: (1) Trials were lost at Me., R.I. and Lewis County, N.Y. after one year of production.

(2) Wilt was observed on DuPuits at Conn. and the Orange Co., N.Y. site in this second hay year. Symptoms not seen on the other varieties.

(3) Wilt-resistant Flamande was at the top in yield in all but one location. Advantage over DuPuits in second-year production was very pronounced at wilt sites.

